Pioneer *sound.vision.soul*

Service Manual

ORDER NO.
CRT2844

MULTI-CD/DAB CONTROL HIGH POWER CASSETTE PLAYER WITH RDS TUNER

KEH-P7020R

X1B/EW

● This service manual should be used together with the manual(s) listed below. For the parts numbers, adjustments, etc. which are not shown in this manual, refer to the following manual(s).

Model No.	Order No.	Mech. Module	Remarks
KEH-P7020R/XN/EW	CRT2817		
CX-1011	CRT2406	3L	Cassette Mech. Module:Mech.Description, Disassembly, Adjustment

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER EUROPE NV Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

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K-ZZA. JAN. 2002 Printed in Japan

EXPLODED VIEWS AND PARTS LIST

PACKING(Page 4)

● **PACKING SECTION PARTS LIST** * : Non spare part

Mark No.	Description	Part No. KEH-P7020R/XN/EW	Part No. KEH-P7020R/X1B/EW
1	Cord Assy	CDE6435	UDE6435
2	Accessory Assy	CEA3062	UEA3062
* 8	Polyethylene Bag	E36-615	CEG-127
9	Polyethylene Bag	CEG-162	UEG-012
10	Case Assy	CXB3520	UXB-009
11	Carton	CHG4626	UHG4626
12	Contain Box	CHL4626	UHL4626
13	Protector	CHP2251	UHP2102
14	Protector	CHP2252	UHP2101
15	Inner Box	CHW1754	UHW1754
16-1	Owner's Manual	CRD3520	URD-203
16-2	Owner's Manual	CRD3521	URD-204
16-3	Owner's Manual	CRD3522	URD-205
16-4	Installation Manual	CRD3533	URD-206
* 16-5	Caution Card	CRP1207	URP1207
* 16-6	Passport	CRY1013	CRY1014
* 16-7	Warranty Card	CRY1157	URY1087
16-8	Polyethylene Bag	CEG1116	UEG1116

EXTERIOR(Page 8)

● **EXTERIOR SECTION PARTS LIST**

Mark No.	Description	Part No. KEH-P7020R/XN/EW	Part No. KEH-P7020R/X1B/EW
5	Cord Assy	CDE6435	UDE6435
11	Case	CNB2686	UNB2686
13	Holder	CNC8659	UNC8659
18	Tuner Amp Unit	CWM7985	UWM7985
36	FM/AM Tuner Unit	CWE1562	UWE1562
60	Detach Grille Assy	CXB7915	UXB7915
80	Keyboard Unit	CWM7988	UWM7988

ELECTRICAL PARTS LIST(Page 44)

TUNER AMP UNIT

Symbol and Description		Part No. KEH-P7020R/XN/EW	Part No. KEH-P7020R/X1B/EW
Q 101	Transistor	2SA1037K	2SA1162
Q 951	Transistor	2SA1037K	2SA1162

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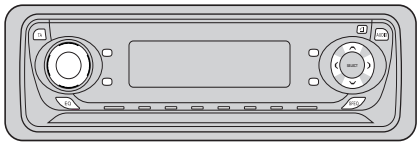
Service Manual



ORDER NO.
CRT2817

KEH-P7020R/XN/EW

MULTI-CD/DAB CONTROL HIGH POWER CASSETTE PLAYER WITH RDS TUNER

KEH-P7020R XN/EW

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH FM/AM TUNER

KEH-P7025 XN/ES

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-1011	CRT2406	3L	Cassette Mech. Module:Mech.Description, Disassembly, Adjustment

NOTE:
Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
This service manual does not describe the CD test mode.
For the operations in the CD test mode, refer to the CD player's Service manual.
Extension cable of cassette mechanism : Jig No. GGD1121

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For details, refer to "Important symbols for good services".

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
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[Important symbols for good services]
In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely.
When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety

You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments

To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning

For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws

To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts

Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount.For replacement parts or tools, the prescribed ones should be used.

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

● KEH-P7020R/XN/EW

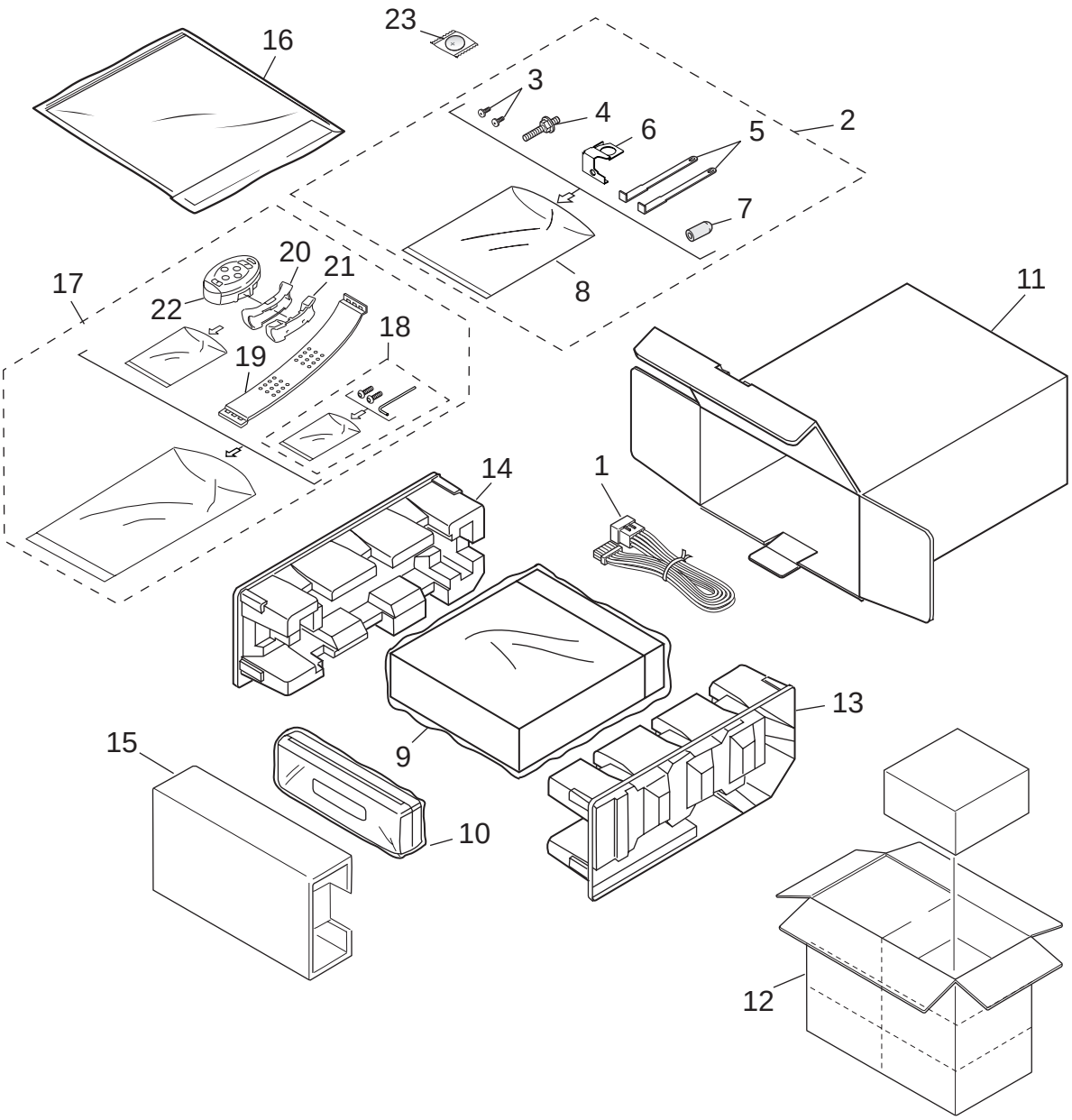
CAUTION

Danger of explosion if battery is incorrectly replaced.
Replaced only with the same or equivalent type recommended by the manufacture.
Discord used batteries according to the manufacture's instructions.

2. EXPLODED VIEWS AND PARTS LIST

*NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.*
• Screw adjacent to ▽ mark on the product are used for disassembly.
• For the applying amount of lobricants or glue, follow the instructions in this manual.
(In the case of no amount instructions,apply as you think it appropriate.)

2.1 PACKING(KEH-P7020R/XN/EW)



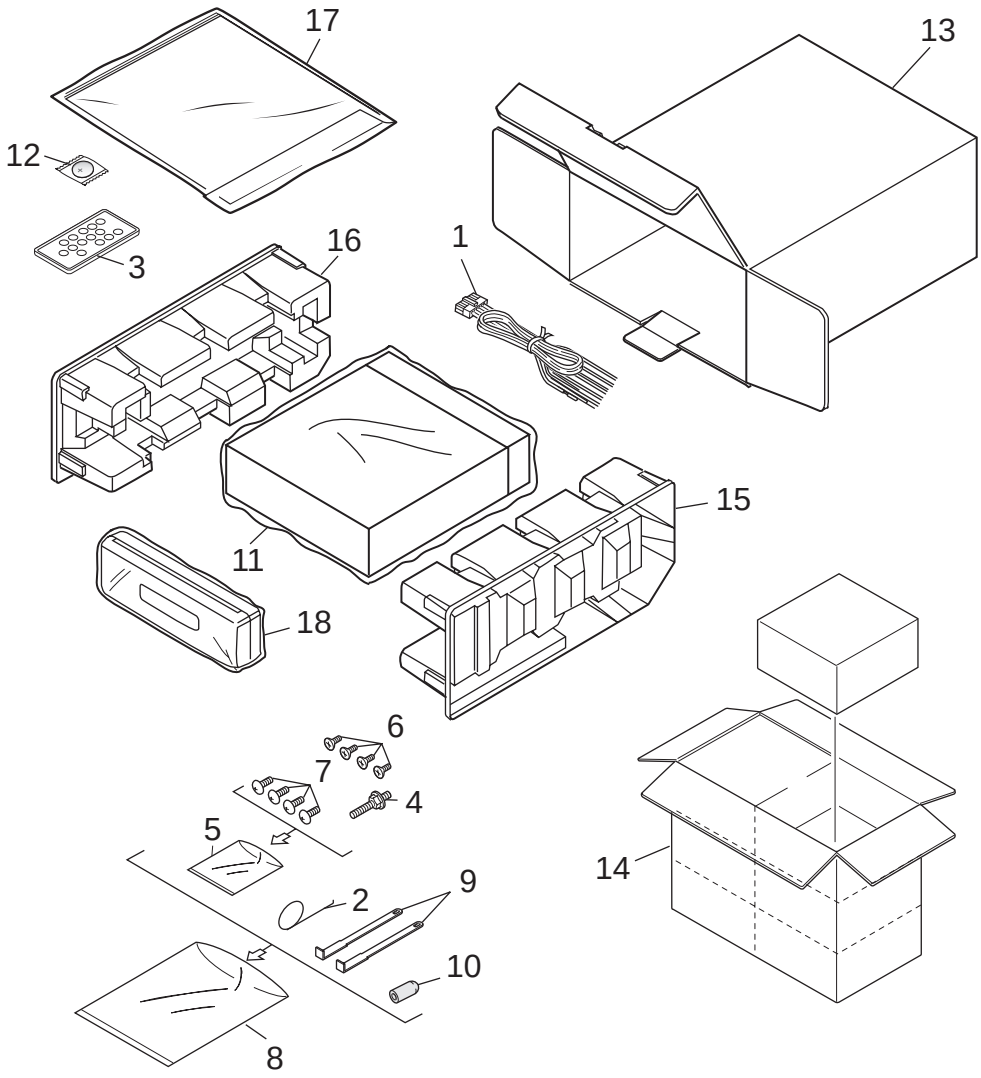
PACKING(KEH-P7020R/XN/EW) PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDE6435
	2	Accessory Assy	CEA3062
	3	Screw	BPZ20P060FZK
	4	Screw	CBA1002
	5	Handle	CNC5395
	6	Earth Plate	CNC9450
	7	Bush	CNV3930
*	8	Polyethylene Bag	E36-615
	9	Polyethylene Bag	CEG-162
	10	Case Assy	CXB3520
	11	Carton	CHG4626
	12	Contain Box	CHL4626
	13	Protector	CHP2251
	14	Protector	CHP2252
	15	Inner Box	CHW1754
	16-1	Owner's Manual	CRD3520
	16-2	Owner's Manual	CRD3521
	16-3	Owner's Manual	CRD3522
	16-4	Installation Manual	CRD3533
*	16-5	Caution Card	CRP1207
*	16-6	Passport	CRY1013
*	16-7	Warranty Card	CRY1157
	16-8	Polyethylene Bag	CEG1116
	17	Remote Control Assy	CXB6860
	18	Screw Assy	CZE3169
	19	Belt	CZN7661
	20	Holder Assy	CZX3172
	21	Holder Assy	CZX3173
	22	Remote Control Assy	CZX3246
*	23	Battery	CEX1030

Owner's Manual,Installation Manual

Part No.	Language
CRD3520	English, Spanish
CRD3521	German, French
CRB3522	Italian, Dutch
CRD3533	English, Spanish, German, French, Italian, Dutch

2.2 PACKING(KEH-P7025/XN/ES)



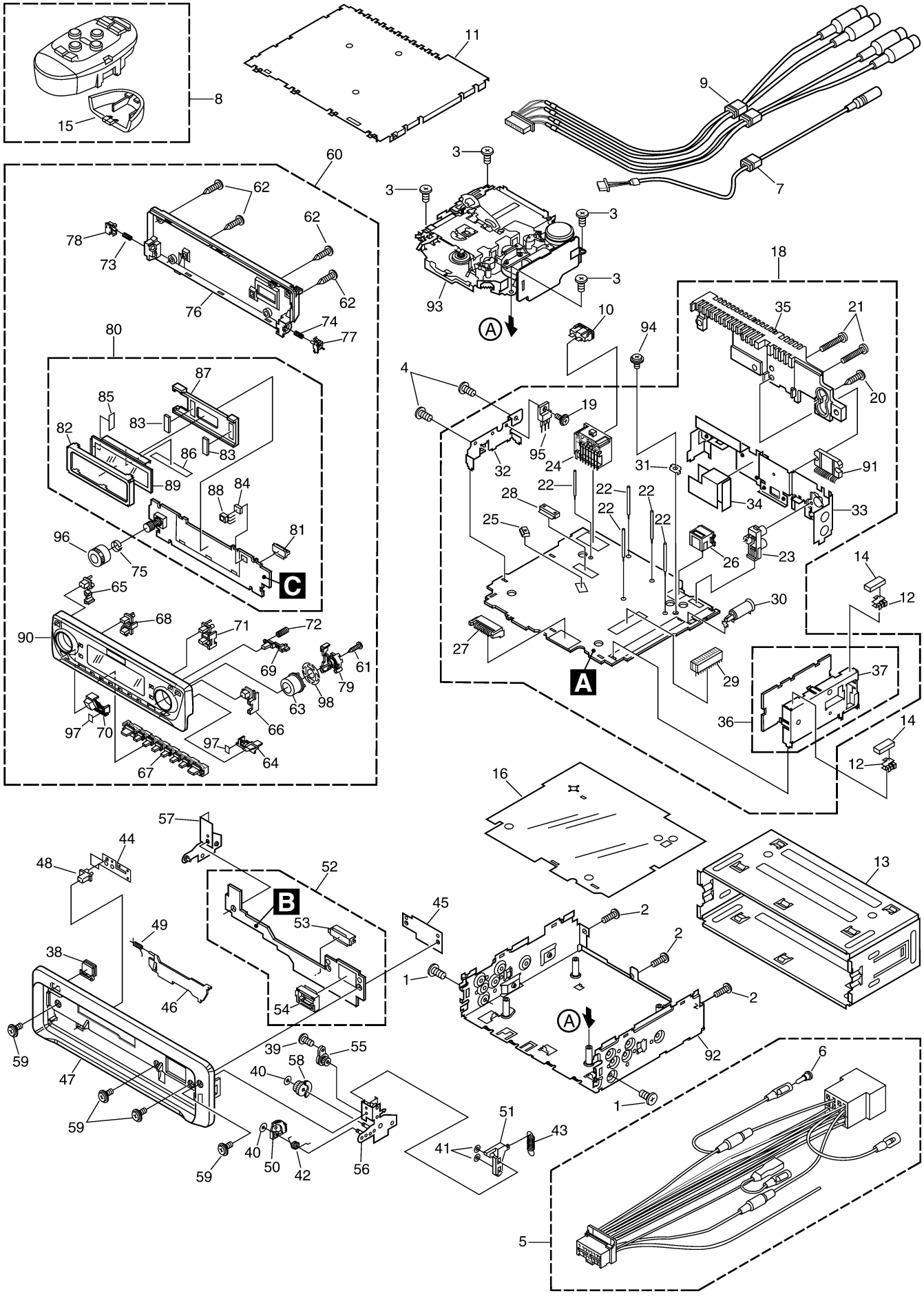
PACKING(KEH-P7025/XN/ES) PARTS LIST

Mark	No.	Description	Part No.
	1	Cord Assy	CDE6438
	2	Spring	CBH1650
	3	Remote Control Unit	CXB8744
	4	Screw	CBA1002
*	5	Polyethylene Bag	CEG-127
	6	Screw	CRZ50P090FMC
	7	Screw	TRZ50P080FMC
*	8	Polyethylene Bag	CEG-158
	9	Handle	CNC5395
	10	Bush	CNV3930
	11	Polyethylene Bag	CEG-162
*	12	Battery	CEX1065
	13	Carton	CHG4625
	14	Contain Box	CHL4625
	15	Protector	CHP2251
	16	Protector	CHP2252
	17-1	Owner's Manual	CRD3523
	17-2	Owner's Manual	CRD3524
	17-3	Installation Manual	CRD3534
*	17-4	Caution Card	CRP1207
*	17-5	Caution Card	CRP1216
	17-6	Polyethylene Bag	CEG1116
	18	Case Assy	CXB3520

Owner's Manual,Installation Manual

Part No.	Language
CRD3523	English, Spanish, Portuguese(B)
CRD3524	Chinese, Arabic
CRD3534	English, Spanish, Portuguese(B), Chinese, Arabic

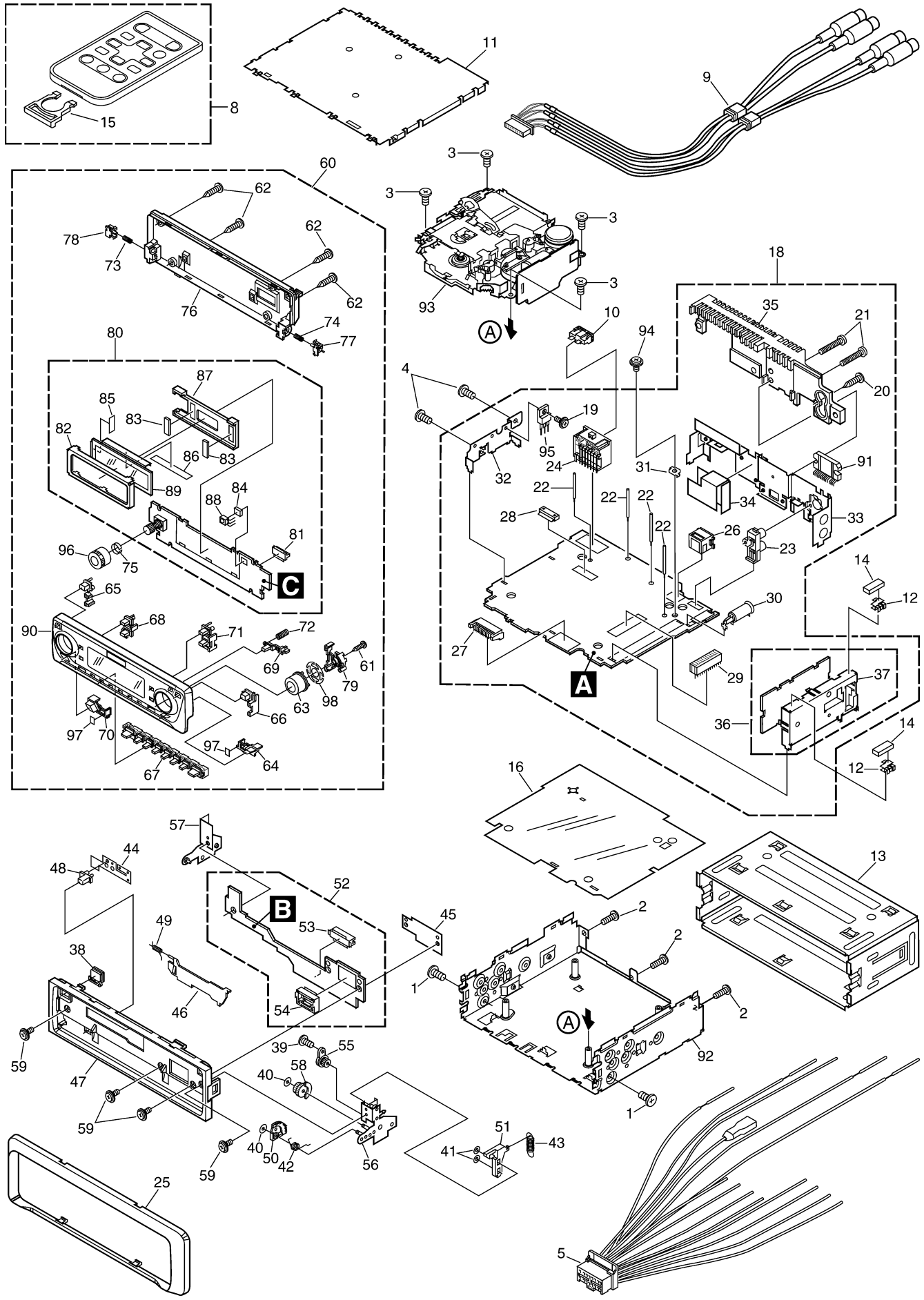
2.3 EXTERIOR(KEH-P7020R/XN/EW)



EXTERIOR(KEH-P7020R/XN/EW) PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FZK
	2	Screw	BMZ30P100FMC
	3	Screw	BSZ26P060FMC
	4	Screw	BSZ30P040FMC
	5	Cord Assy	CDE6435
	6	Cap	CKX-003
	7	Cord Assy	CDE6717
	8	Remote Control Assy	CZX3246
	9	Cord Assy	CDE6747
	10	Fuse(10A)	CEK1136
	11	Case	CNB2686
	12	Holder	CNC5704
	13	Holder	CNC8659
	14	Cushion	CNM4870
	15	Cover	CZN7655
	16	Insulator	CNM7629
	17	•••••	
	18	Tuner Amp Unit	CWM7985
	19	Screw	ASZ26P060FMC
	20	Screw	BPZ26P120FMC
	21	Screw	BSZ26P160FMC
	22	Clamper	CEF1007
	23	Pin Jack(CN351)	CKB1035
	24	Plug(CN901)	CKM1330
	25	Plug(CN451)	CKS1049
	26	Connector(CN101)	CKS3408
	27	Plug(CN801)	CKS3537
	28	Connector(CN352)	CKS3602
	29	Connector(CN251)	CKS3568
	30	Antenna Jack(CN401)	CKX1056
	31	Holder	CNC5399
	32	Holder	CNC8615
	33	Holder	CNC9468
	34	Insulator	CNM6949
	35	Heat Sink	CNR1583
	36	FM/AM Tuner Unit	CWE1562
	37	Holder	CNC8815
	38	Button(EJECT)	CAC6839
	39	Screw(M2x2)	CBA1176
	40	Washer	CBF1038
	41	Washer	CBF1039
	42	Spring	CBH2428
	43	Spring	CBH2429
	44	Spring	CBL1512
	45	Holder	CNC9096
	46	Door	CAT2109
	47	Panel	CNS6950
	48	Pin	CNV6486
	49	Spring	CBH1838
	50	Gear	CNV6507
	51	Arm	CNV6508
	52	Panel Unit	CWM7987
	53	Socket(CN1850)	CKS3550
	54	Connector(CN1851)	CKS4462
	55	Damper Unit	CXB5070
	56	Holder Unit	CXB6356
	57	Holder Unit	CXB6357
	58	Clutch Unit	CXB6358
	59	Screw	IMS20P045FZK
	60	Detach Grille Assy	CXB7915
	61	Screw	BPZ20P080FMC
	62	Screw	BPZ20P100FZK
	63	Button(SELECT)	CAC7220
	64	Button(SFEQ)	CAC7221
	65	Button(TA)	CAC7223
	66	Button(AUDIO)	CAC7224
	67	Button(1-6)	CAC7225
	68	Button(DISP)	CAC7226
	69	Button(OPEN)	CAC7227
	70	Button(EQ)	CAC7231
	71	Button(FUNC)	CAC7489
	72	Spring	CBH2630
	73	Spring	CBH2431
	74	Spring	CBH2430
	75	Spring	CBL1470
	76	Cover	CNS6740
	77	Holder	CNV6505
	78	Holder	CNV6506
	79	Holder	CNV6909
	80	Keyboard Unit	CWM7988
	81	Connector(CN1901)	CKS4524
	82	Holder	CNC9642
	83	Cushion	CNM6633
	84	Cushion	CNM7469
	85	Spacer	CNM7697
	86	Spacer	CNM7698
	87	Holder	CNV6910
	88	IC(IC1903)	TSOP1840SB3V
	89	OEL Unit	MXS8017
	90	Sub Grille Assy	CXB8816
	91	IC(IC301)	PAL007A
	92	Chassis Unit	CXB8481
	93	Cassette Mechanism Module	EXK4060
	94	Screw	ISS26P055FUC
	95	Transistor(Q921)	2SD2396
*	96	Knob	CAA2697
	97	Spacer	CNM7807
	98	Cushion	CNM7808

2.4 EXTERIOR(KEH-P7025/XN/ES)

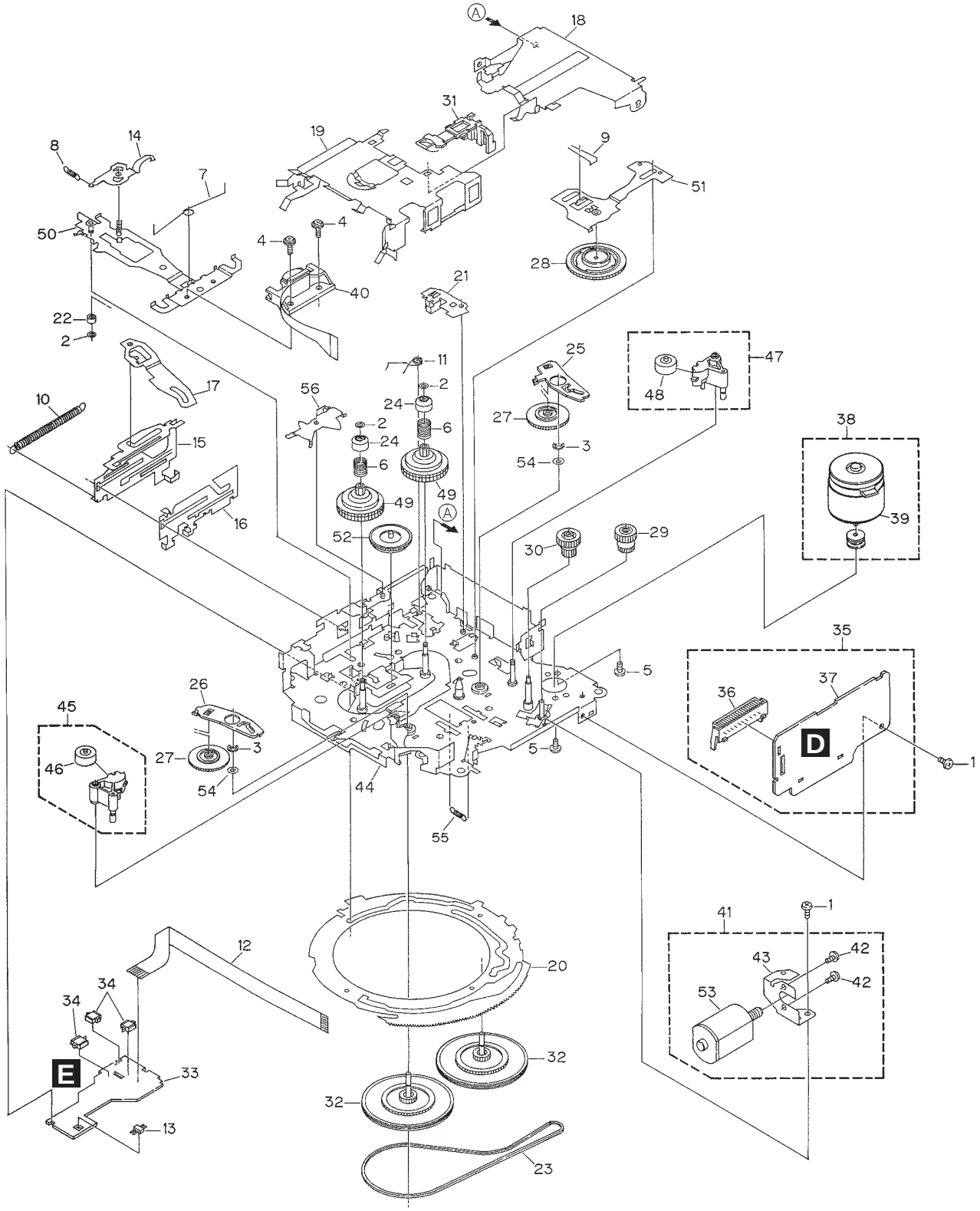


EXTERIOR(KEH-P7025/XN/ES) PARTS LIST

Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FZK
	2	Screw	BMZ30P100FMC
	3	Screw	BSZ26P060FMC
	4	Screw	BSZ30P040FMC
	5	Cord Assy	CDE6438
	6,7	•••••	
	8	Remote Control Unit	CXB8744
	9	Cord Assy	CDE6747
	10	Fuse(10A)	CEK1136
	11	Case	CNB2686
	12	Holder	CNC5704
	13	Holder	CNC8659
	14	Cushion	CNM4870
	15	Cover	CNS7068
	16	Insulator	CNM7629
	17	•••••	
	18	Tuner Amp Unit	CWM8125
	19	Screw	ASZ26P060FMC
	20	Screw	BPZ26P120FMC
	21	Screw	BSZ26P160FMC
	22	Clamper	CEF1007
	23	Pin Jack(CN351)	CKB1035
	24	Plug(CN901)	CKM1330
	25	Panel	CNS6935
	26	Connector(CN101)	CKS3408
	27	Plug(CN801)	CKS3537
	28	Connector(CN352)	CKS3602
	29	Connector(CN251)	CKS3568
	30	Antenna Jack(CN401)	CKX1056
	31	Holder	CNC5399
	32	Holder	CNC8615
	33	Holder	CNC9469
	34	Insulator	CNM6949
	35	Heat Sink	CNR1583
	36	FM/AM Tuner Unit	CWE1563
	37	Holder	CNC8815
	38	Button(EJECT)	CAC6839
	39	Screw(M2x2)	CBA1176
	40	Washer	CBF1038
	41	Washer	CBF1039
	42	Spring	CBH2428
	43	Spring	CBH2429
	44	Spring	CBL1512
	45	Holder	CNC9096
	46	Door	CAT2109
	47	Panel	CNS6280
	48	Pin	CNV6486
	49	Spring	CBH1838
	50	Gear	CNV6507
	51	Arm	CNV6508
	52	Panel Unit	CWM7987
	53	Socket(CN1850)	CKS3550
	54	Connector(CN1851)	CKS4462
	55	Damper Unit	CXB5070
	56	Holder Unit	CXB6356
	57	Holder Unit	CXB6357
	58	Clutch Unit	CXB6358
	59	Screw	IMS20P045FZK
	60	Detach Grille Assy	CXB8428
	61	Screw	BPZ20P080FMC
	62	Screw	BPZ20P100FZK
	63	Button(SELECT)	CAC7220
	64	Button(SFEQ)	CAC7221
	65	Button(ENT)	CAC7253
	66	Button(AUDIO)	CAC7254
	67	Button(1-6)	CAC7225
	68	Button(DISP)	CAC7226
	69	Button(OPEN)	CAC7227
	70	Button(EQ)	CAC7231
	71	Button(FUNC)	CAC7489
	72	Spring	CBH2630
	73	Spring	CBH2431
	74	Spring	CBH2430
	75	Spring	CBL1470
	76	Cover	CNS6740
	77	Holder	CNV6505
	78	Holder	CNV6506
	79	Holder	CNV6909
	80	Keyboard Unit	CWM8237
	81	Connector(CN1901)	CKS4524
	82	Holder	CNC9642
	83	Cushion	CNM6633
	84	Cushion	CNM7469
	85	Spacer	CNM7697
	86	Spacer	CNM7698
	87	Holder	CNV6910
	88	IC(IC1903)	TSOP1840SB3V
	89	OEL Unit	MXS8017
	90	Sub Grille Assy	CXB8950
	91	IC(IC301)	PAL007A
	92	Chassis Unit	CXB6105
	93	Cassette Mechanism Module	EXK4060
	94	Screw	ISS26P055FUC
	95	Transistor(Q921)	2SD2396
*	96	Knob	CAA2697
	97	Spacer	CNM7807
	98	Cushion	CNM7808

2.5 CASSETTE MECHANISM MODULE

For grease application, refer to the service manual for CX-1011 (CRT2406).



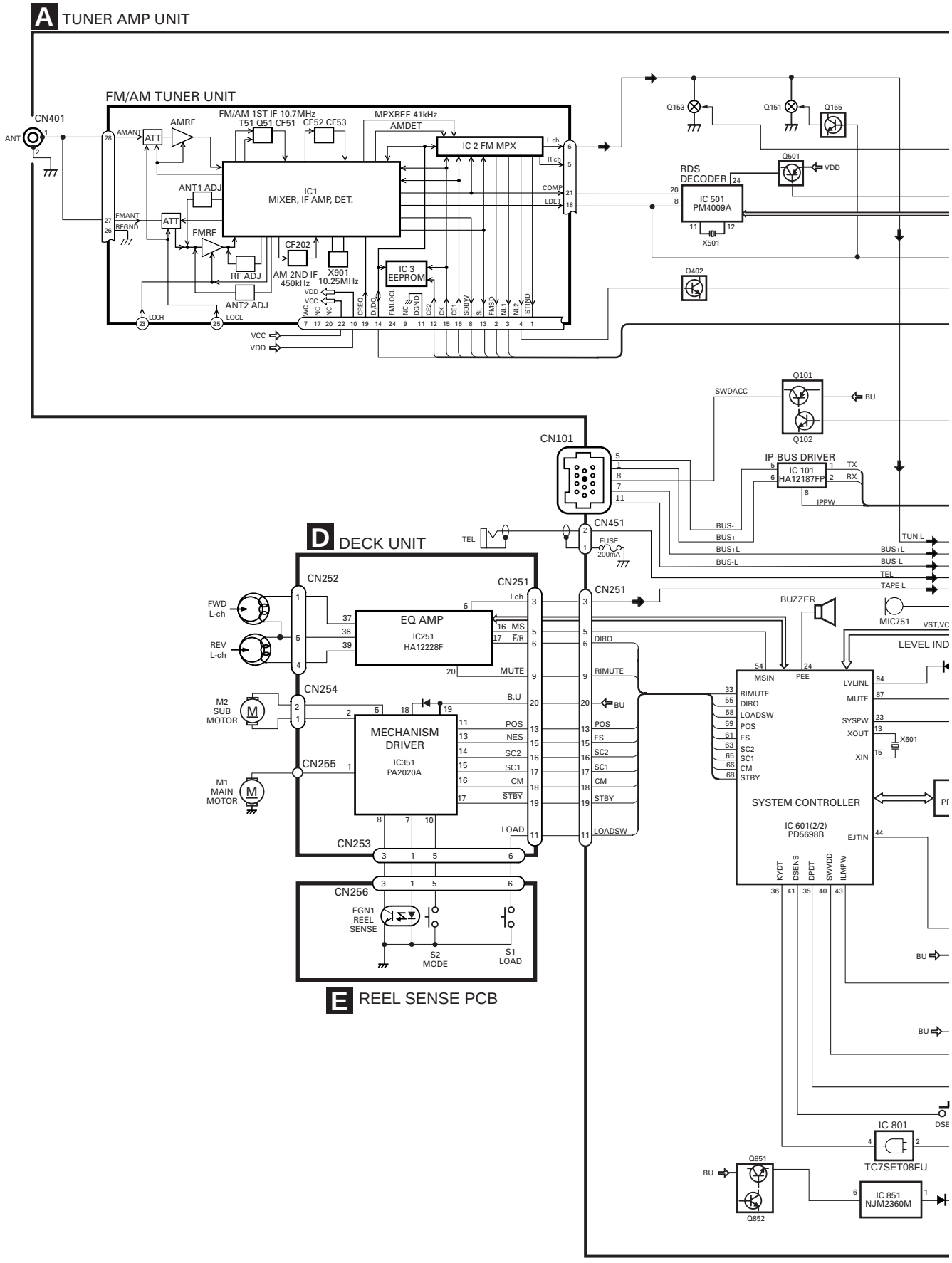
CASSETTE MECHANISM MODULE PARTS LIST

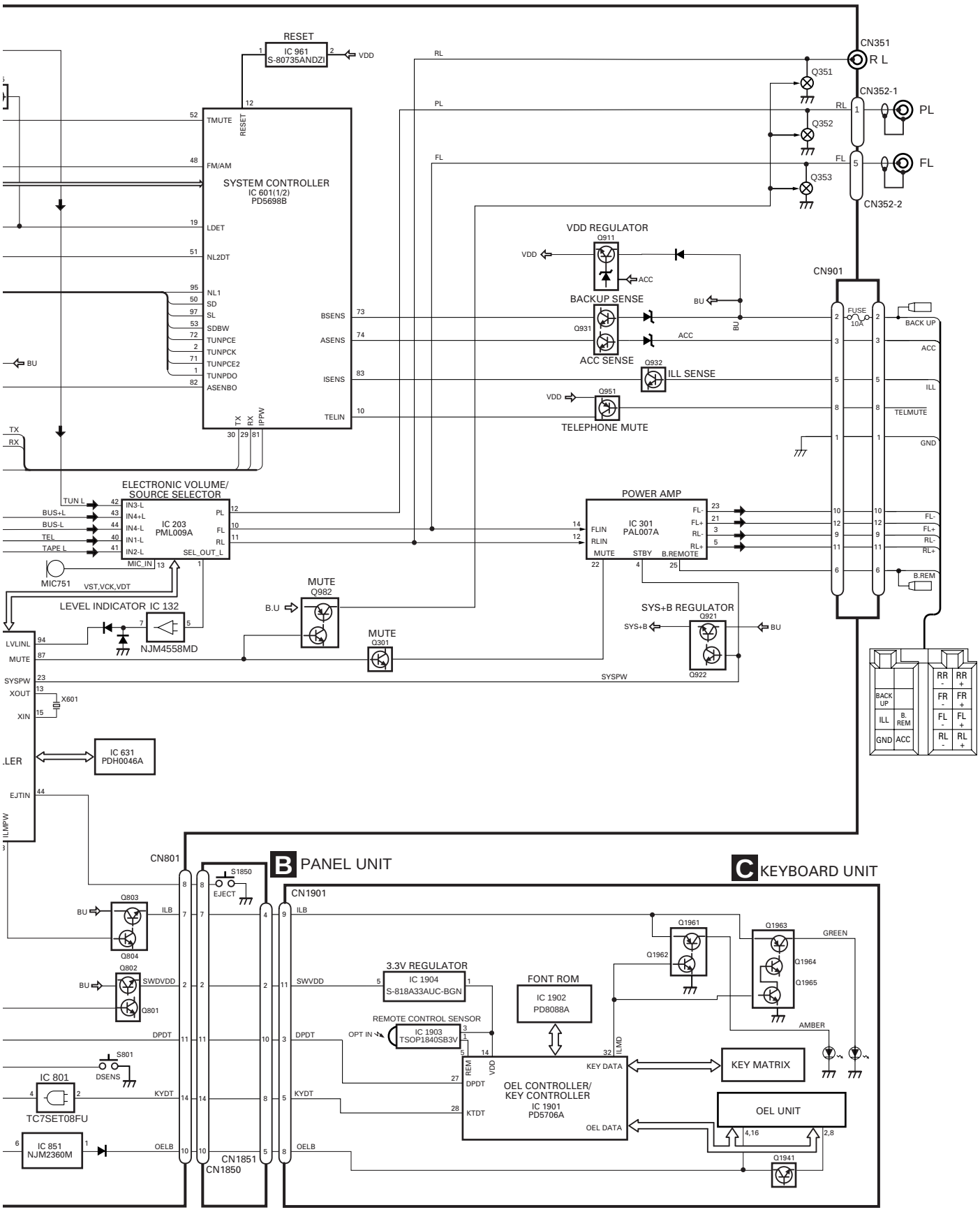
Mark	No.	Description	Part No.
	1	Screw	BSZ20P040FMC
	2	Washer	CBF1037
	3	Washer	CBG1003
	4	Screw	EBA1028
	5	Screw	CBA1037
	6	Spring	EBH1531
	7	Spring	EBH1642
	8	Spring	EBH1641
	9	Spring	EBH1626
	10	Spring	EBH1627
	11	Spring	EBH1648
	12	Cord	EDD1024
	13	Photo-reflector(EGN1)	EGN1004
	14	Arm	ENC1526
*	15	Lever	ENC1544
	16	Lever	ENC1543
	17	Arm	ENC1532
	18	Frame	ENC1533
	19	Holder	ENC1534
	20	Gear	ENC1535
	21	Arm	ENC1550
	22	Roller	ENR1040
	23	Belt	ENT1027
	24	Collar	ENV1508
	25	Arm	ENV1539
	26	Arm	ENV1540
	27	Gear	ENV1544
	28	Gear	ENV1547
	29	Gear	ENV1560
	30	Worm Wheel	ENV1566
	31	Lever	ENV1551
	32	Flywheel	ENV1554
	33	Gathering PCB	ENX1068
	34	Switch(S1,S2,S3)	ESG1007
	35	Deck Unit	EWM1033
	36	Plug(CN251)	CKS3540
	37	Gathering PCB	ENX1067
	38	Motor Unit(M1)	EXA1490
	39	Motor	EXM1027
	40	Head Assy(HD1)	EXA1589
	41	Motor Unit(M2)	EXA1580
	42	Screw	BMZ20P022FMC
	43	Bracket	ENC1528
	44	Chassis Unit	EXA1615
	45	Pinch Holder Unit	EXA1608
	46	Pinch Roller	ENV1518
	47	Pinch Holder Unit	EXA1607
	48	Pinch Roller	ENV1518
	49	Reel Unit	EXA1585
	50	Head Base Unit	EXA1611
	51	Lever Unit	EXA1587
	52	Gear Unit	EXA1596
	53	Motor Unit(Service)	EXX1055
	54	Washer	HBF-179
	55	Spring	EBH1537
	56	Arm	ENC1537

A B C D

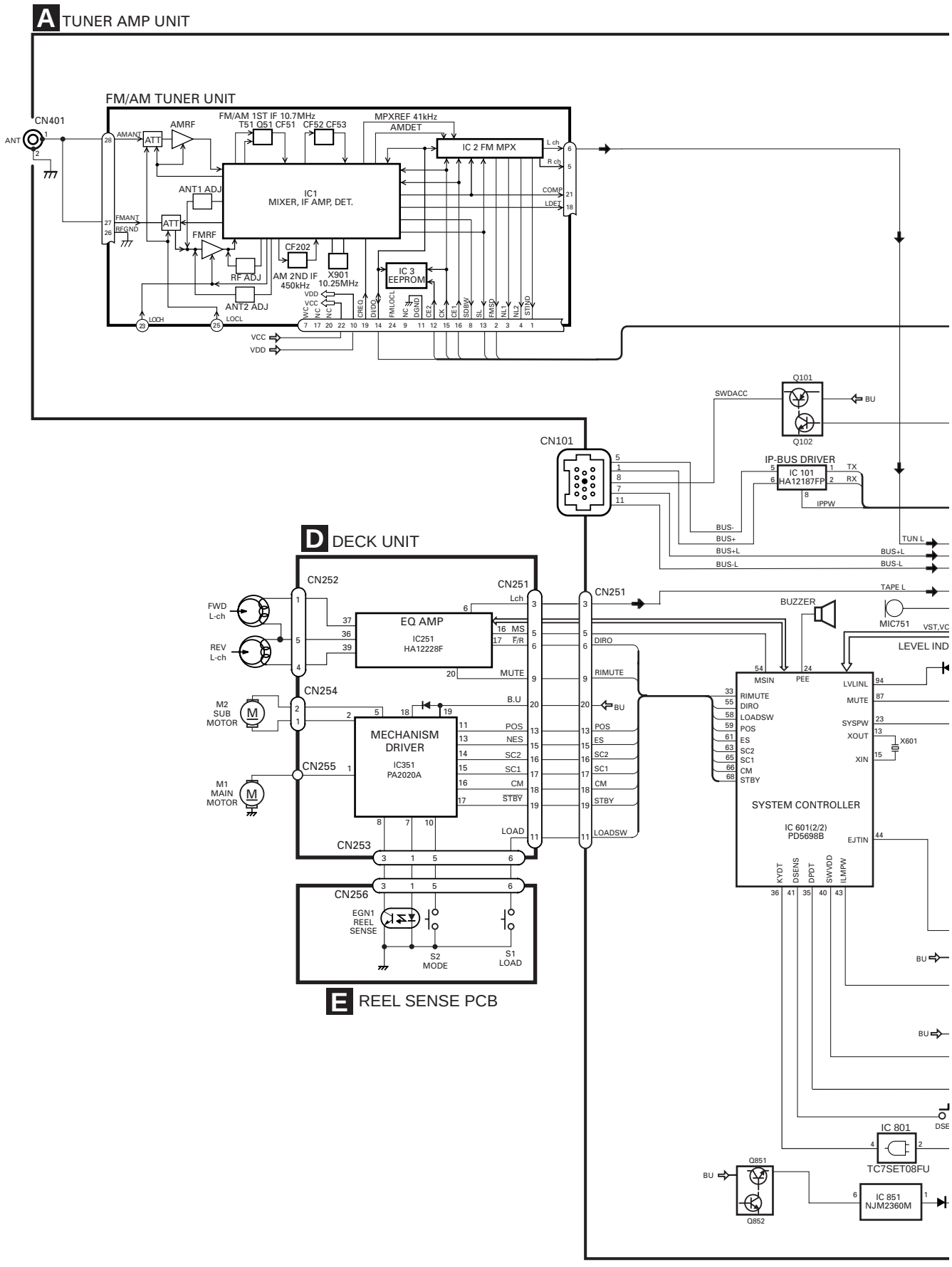
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

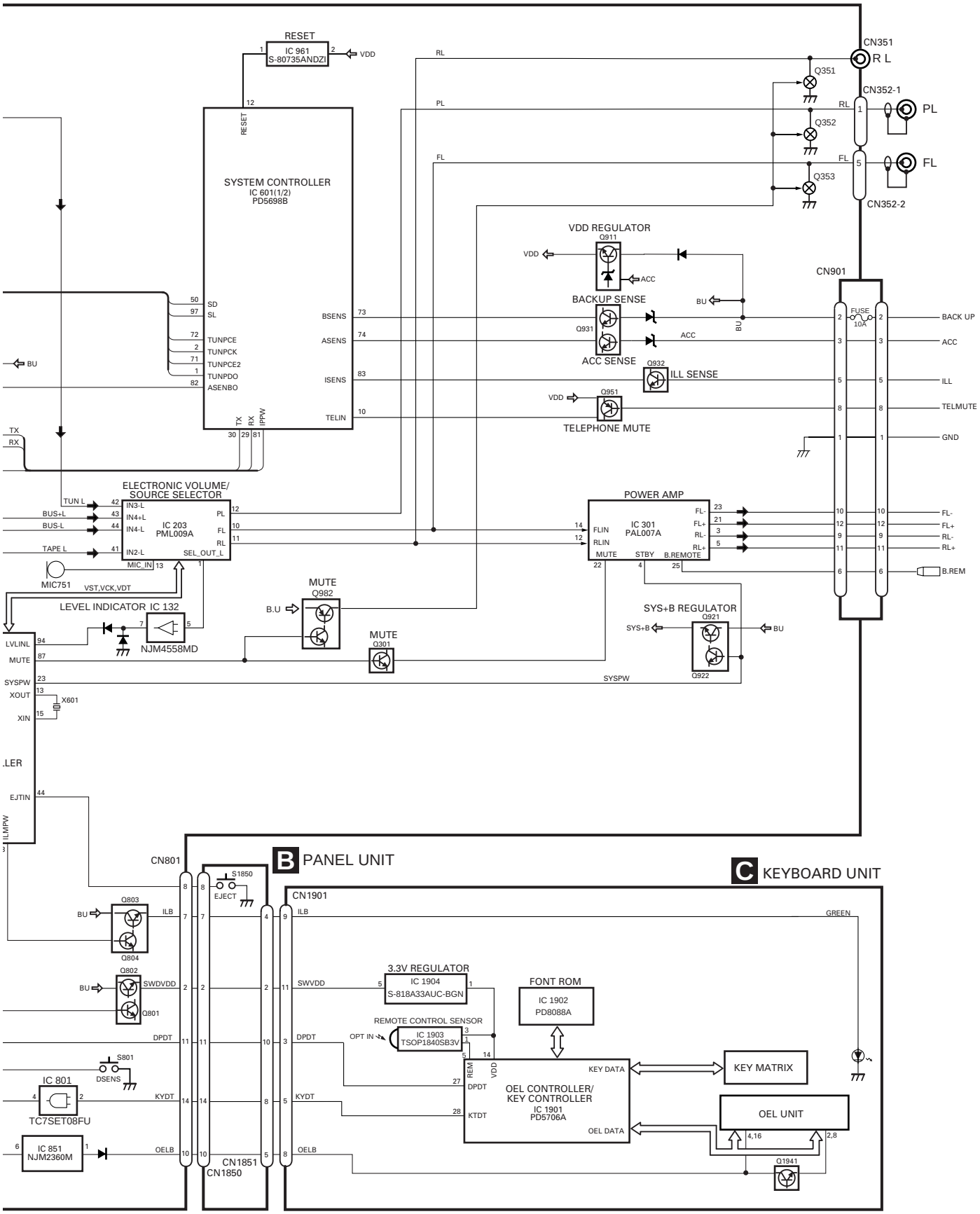
3.1 BLOCK DIAGRAM(KEH-P7020R/XN/EW)




RESET
IC 961
S-80735ANDZI
VDD
SYSTEM CONTROLLER
IC 601(1/2)
PD5698B
TMUTE
RESET
FM/AM
LDET
NL2DT
NL1
SD
SL
SDBW
TUNPCE
TUNPCK
TUNPCE2
TUNPDO
ASENBO
BSENS
ASENS
ISENS
TELIN
TX
RX
IPPW
BU
CN351
R L
Q351
Q352
Q353
CN352-1
CN352-2
PL
FL
VDD REGULATOR
Q911
ACC
BACKUP SENSE
Q931
ACC SENSE
Q932
ILL SENSE
Q951
TELEPHONE MUTE
CN901
FUSE
10A
BACK UP
ILL
TELMUTE
GND
B.REM
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC 203
PML009A
TUN L
BUS+L
BUS-L
TEL
TAPE L
MIC_IN
MIC751
VST,VCK,VDT
LEVEL INDICATOR IC 132
NJM4558MD
POWER AMP
IC 301
PAL007A
FLIN
RLIN
MUTE
STBY
B.REMOTE
MUTE
Q982
B.U
MUTE
Q301
SYS+B REGULATOR
Q921
Q922
SYS+B
SYSPW
LVLINL
XOUT
XIN
X601
IC 631
PDH0046A
EJTIN
CN801
S1850
EJECT
B PANEL UNIT
CN1901
C KEYBOARD UNIT
Q803
Q804
Q802
Q801
ILB
SWVDD
DPDT
3.3V REGULATOR
IC 1904
S-818A33AUC-BGN
FONT ROM
IC 1902
PD8088A
REMOTE CONTROL SENSOR
IC 1903
TSOP1840SB3V
OPT IN
Q1961
Q1962
Q1963
Q1964
Q1965
GREEN
AMBER
S801
DSENS
IC 801
TC7SET08FU
KYDT
OEL CONTROLLER/
KEY CONTROLLER
IC 1901
PD5706A
KEY DATA
OEL DATA
KEY MATRIX
OEL UNIT
IC 851
NJM2360M
OELB
CN1851
CN1850
Q1941

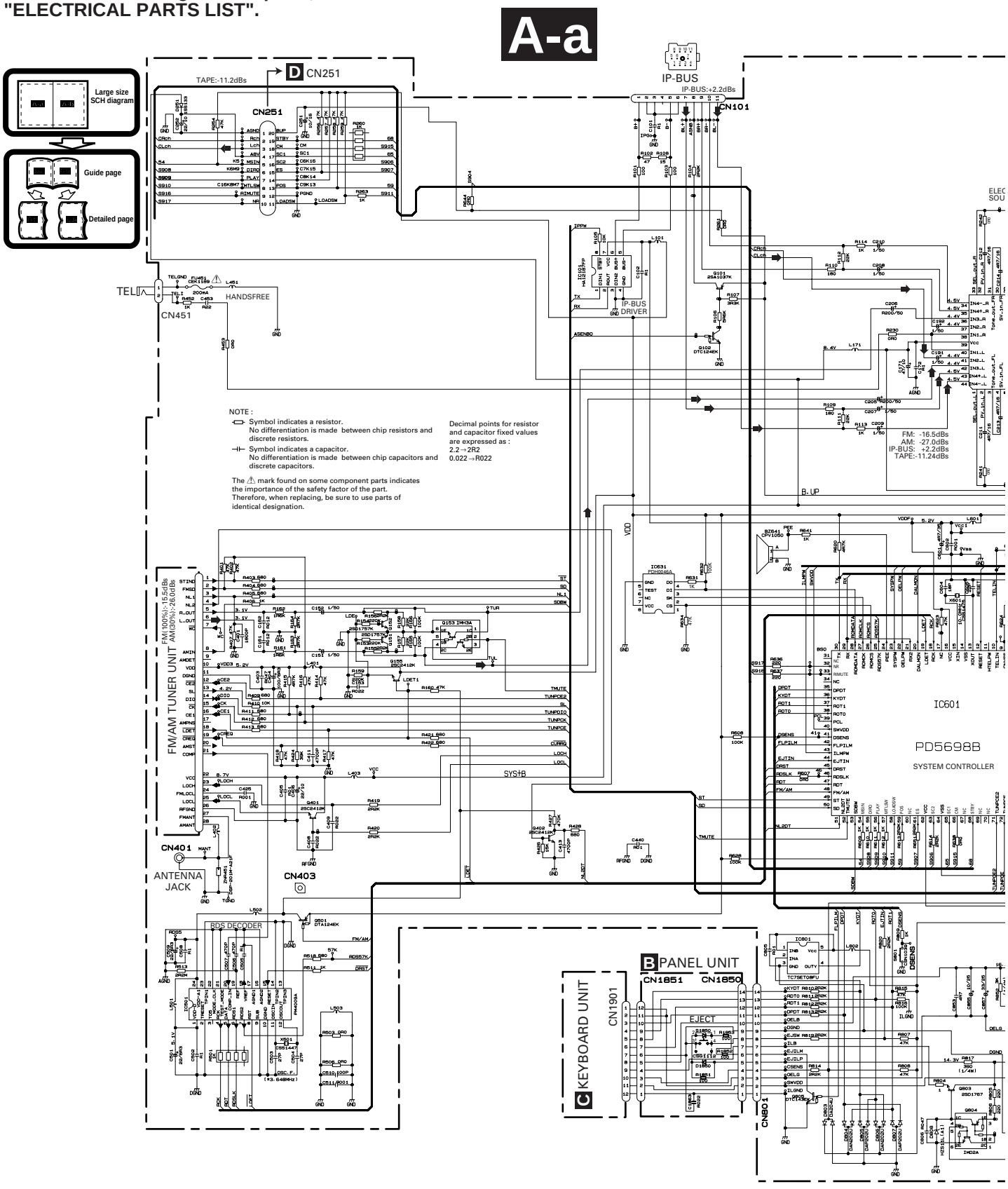
3.2 BLOCK DIAGRAM(KEH-P7025/XN/ES)




RESET
IC 961
S-80735ANDZI
VDD
SYSTEM CONTROLLER
IC 601(1/2)
PD5698B
RESET
SD
SL
TUNPCE
TUNPCK
TUNPCE2
TUNDPO
ASENBO
BSENS
ASENS
ISENS
TELIN
TX
RX
IPPW
BU
CN351
R L
Q351
Q352
Q353
CN352-1
CN352-2
PL
FL
VDD REGULATOR
Q911
ACC
BACKUP SENSE
Q931
ACC SENSE
Q932
ILL SENSE
Q951
TELEPHONE MUTE
CN901
FUSE
10A
BACK UP
ACC
ILL
TELMUTE
GND
FL-
FL+
RL-
RL+
B.REM
ELECTRONIC VOLUME/
SOURCE SELECTOR
IC 203
PML009A
TUN L
BUS+L
BUS-L
TAPE L
MIC_IN
MIC751
VST,VCK,VDT
LEVEL INDICATOR IC 132
NJM4558MD
MUTE
Q982
B.U
Q301
POWER AMP
IC 301
PAL007A
FLIN
RLIN
MUTE
STBY
B.REMOTE
SYS+B REGULATOR
Q921
Q922
SYS+B
SYSPW
LVLINL
XOUT
X601
XIN
EJTIN
ILMPW
CN801
B PANEL UNIT
S1850
EJECT
Q803
Q804
Q802
Q801
SWDVDD
DPDT
KYDT
OELB
S801
DSENS
IC 801
TC7SET08FU
IC 851
NJM2360M
CN1851
CN1850
C KEYBOARD UNIT
CN1901
ILB
GREEN
3.3V REGULATOR
IC 1904
S-818A33AUC-BGN
FONT ROM
IC 1902
PD8088A
REMOTE CONTROL SENSOR
IC 1903
TSOP1840SB3V
OPT IN
OEL CONTROLLER/
KEY CONTROLLER
IC 1901
PD5706A
REM
KEY DATA
OEL DATA
KEY MATRIX
OEL UNIT
Q1941

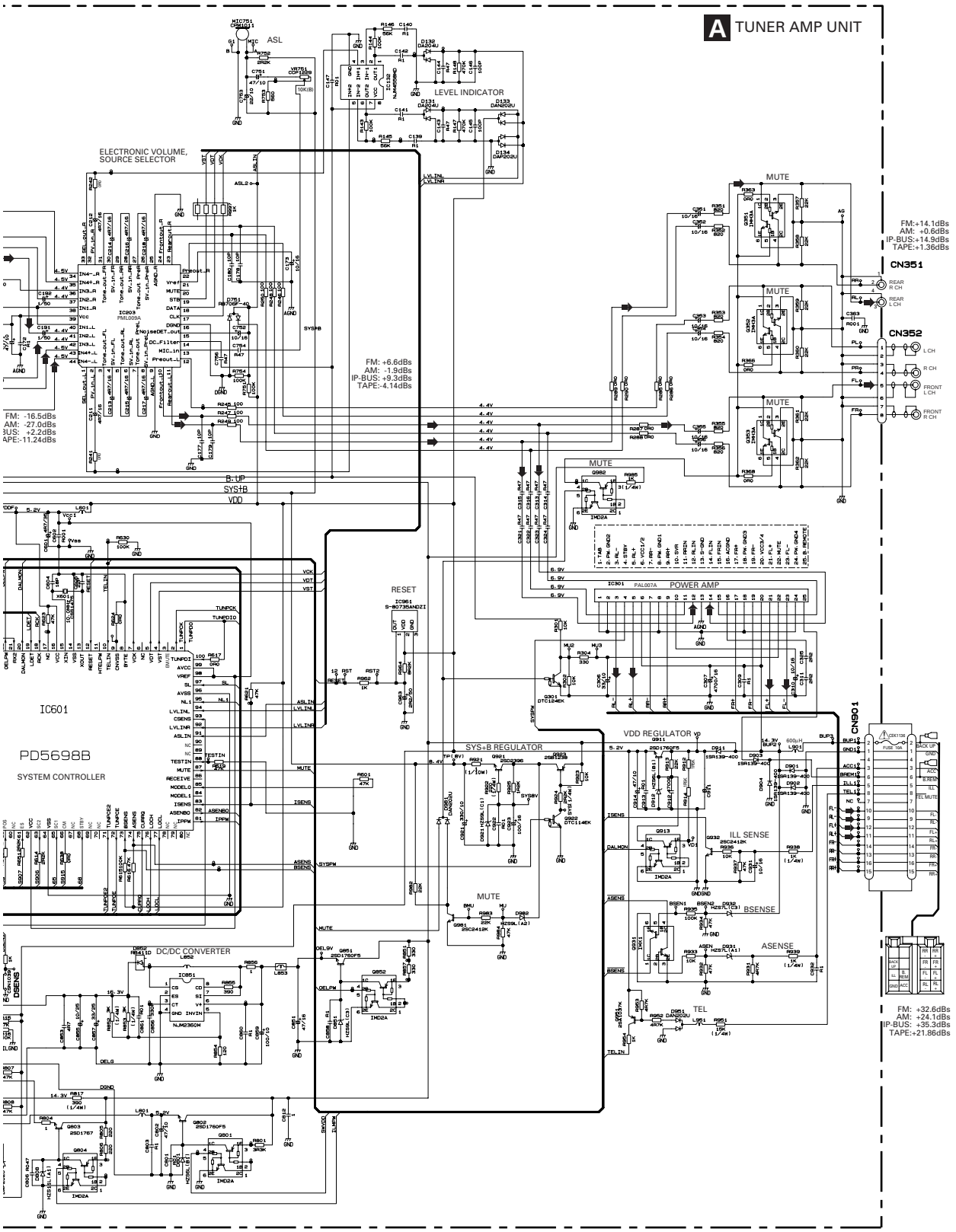
3.3 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)(KEH-P7020R/XN/EW)

Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A B

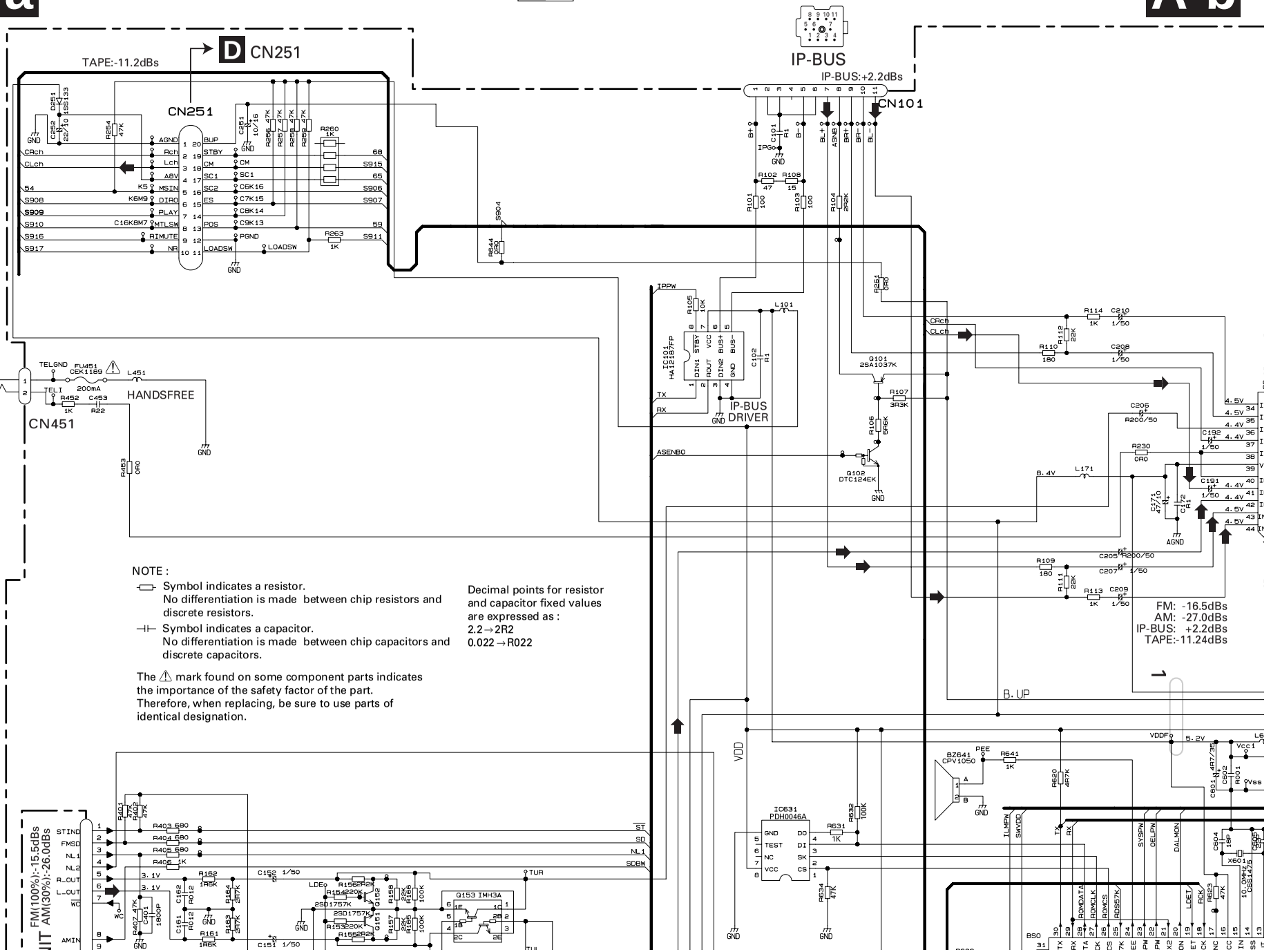
A-b

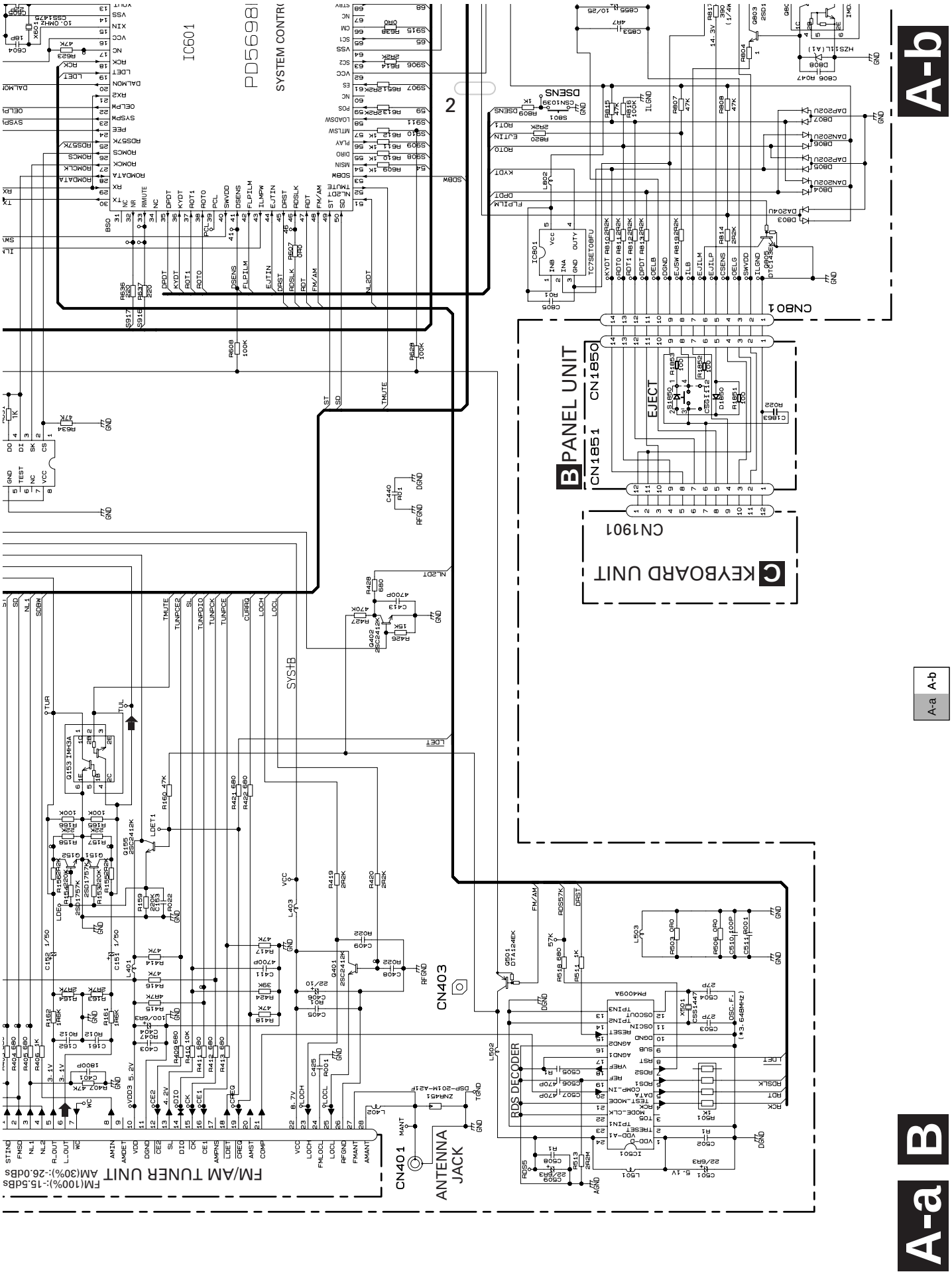

A TUNER AMP UNIT
ASL
LEVEL INDICATOR
ELECTRONIC VOLUME, SOURCE SELECTOR
MUTE
CN351
CN352
CN501
REAR R CH
REAR L CH
L CH
R CH
FRONT L CH
FRONT R CH
FM:+14.1dBs
AM: +0.6dBs
IP-BUS:+14.9dBs
TAPE:+1.36dBs
FM: +6.6dBs
AM: -1.9dBs
IP-BUS: +9.3dBs
TAPE:-4.14dBs
FM: -16.5dBs
AM: -27.0dBs
BUS: +2.2dBs
APE:-11.24dBs
B-UP
SYS+B
VDD
RESET
IC601
PD5698B
SYSTEM CONTROLLER
POWER AMP
SYS+B REGULATOR
VDD REGULATOR
ILL SENSE
BSENSE
ASENSE
TEL
DC/DC CONVERTER
FM: +32.6dBs
AM: +24.1dBs
IP-BUS: +35.3dBs
TAPE:+21.86dBs

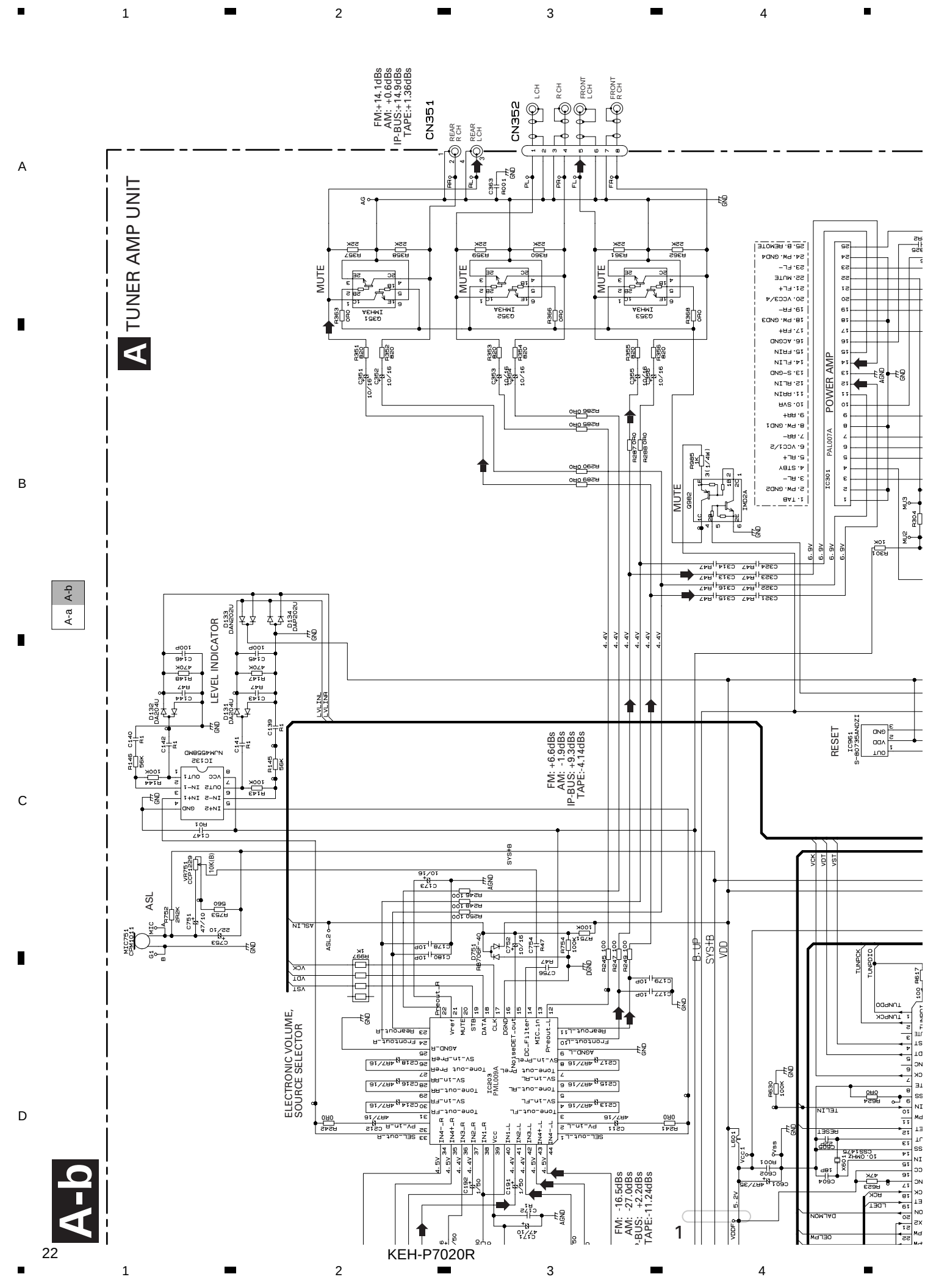
A-a

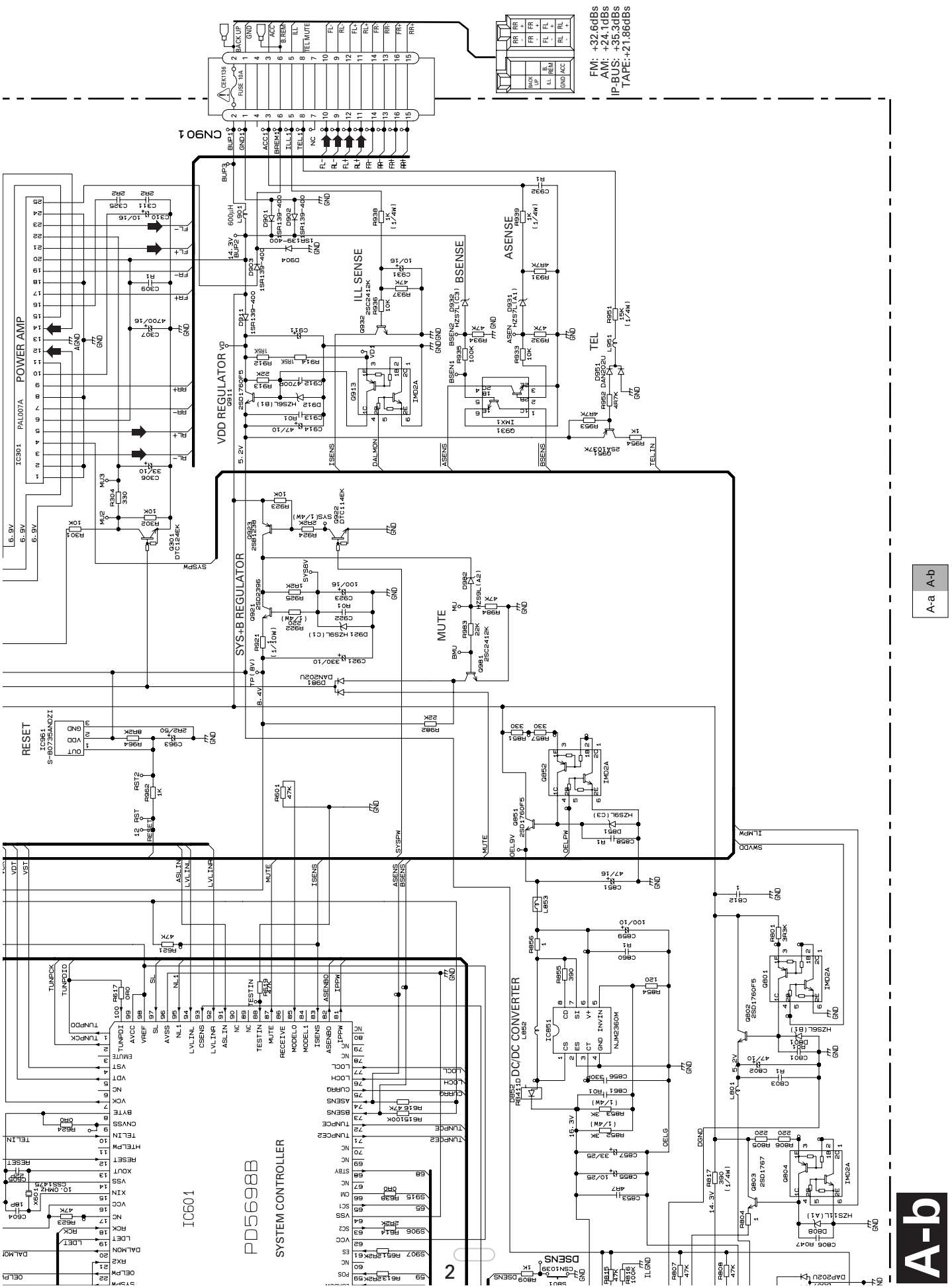
A-a A-b

A-b

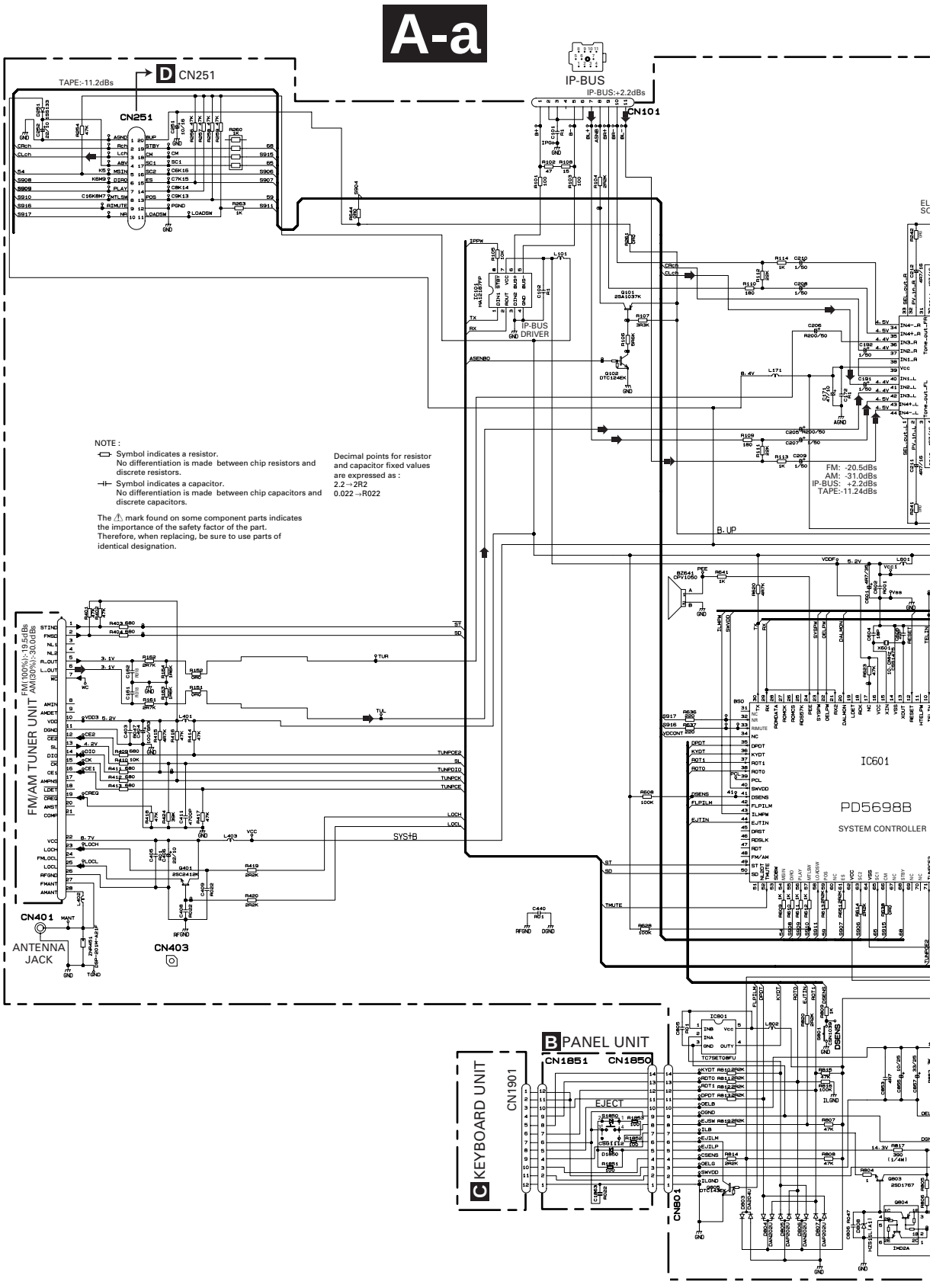

D CN251
TAPE:-11.2dBs
CN251
IP-BUS
IP-BUS:+2.2dBs
CN101
TEL
CN451
HANDSFREE
IP-BUS DRIVER
B. UP
FM: -16.5dBs
AM: -27.0dBs
IP-BUS: +2.2dBs
TAPE:-11.24dBs
FM(100%):-15.5dBs
AM(30%):-26.0dBs
VDD
VDDF
5.2V
4.5V
B. 4V
AGND
GND
TX
RX
ASENBO
IPPW
CRch
CLch
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022


A-b
B PANEL UNIT
CN1851
CN1850
EJECT
CN901
C KEYBOARD UNIT
CN401
ANTENNA JACK
CN403
FM/AM TUNER UNIT
FM(100%):-15.5dBs
AM(30%):-26.0dBs
RDS DECODER
SYS+B
IC601
PD5698
SYSTEM CONTR
DSENS
A-a
B
A-b
A-a


A TUNER AMP UNIT
CN351
CN352
FM:+14.1dBs
AM: +0.6dBs
IP-BUS:+14.9dBs
TAPE:+1.36dBs
REAR R CH
REAR L CH
L CH
R CH
FRONT L CH
FRONT R CH
MUTE
POWER AMP
PAL007A
LEVEL INDICATOR
ASL
ELECTRONIC VOLUME, SOURCE SELECTOR
RESET
FM: +6.6dBs
AM: -1.9dBs
IP-BUS: +9.3dBs
TAPE:-4.14dBs
FM: -16.5dBs
AM: -27.0dBs
IP-BUS: +2.2dBs
TAPE:-11.24dBs
A-b
A-a
A-b

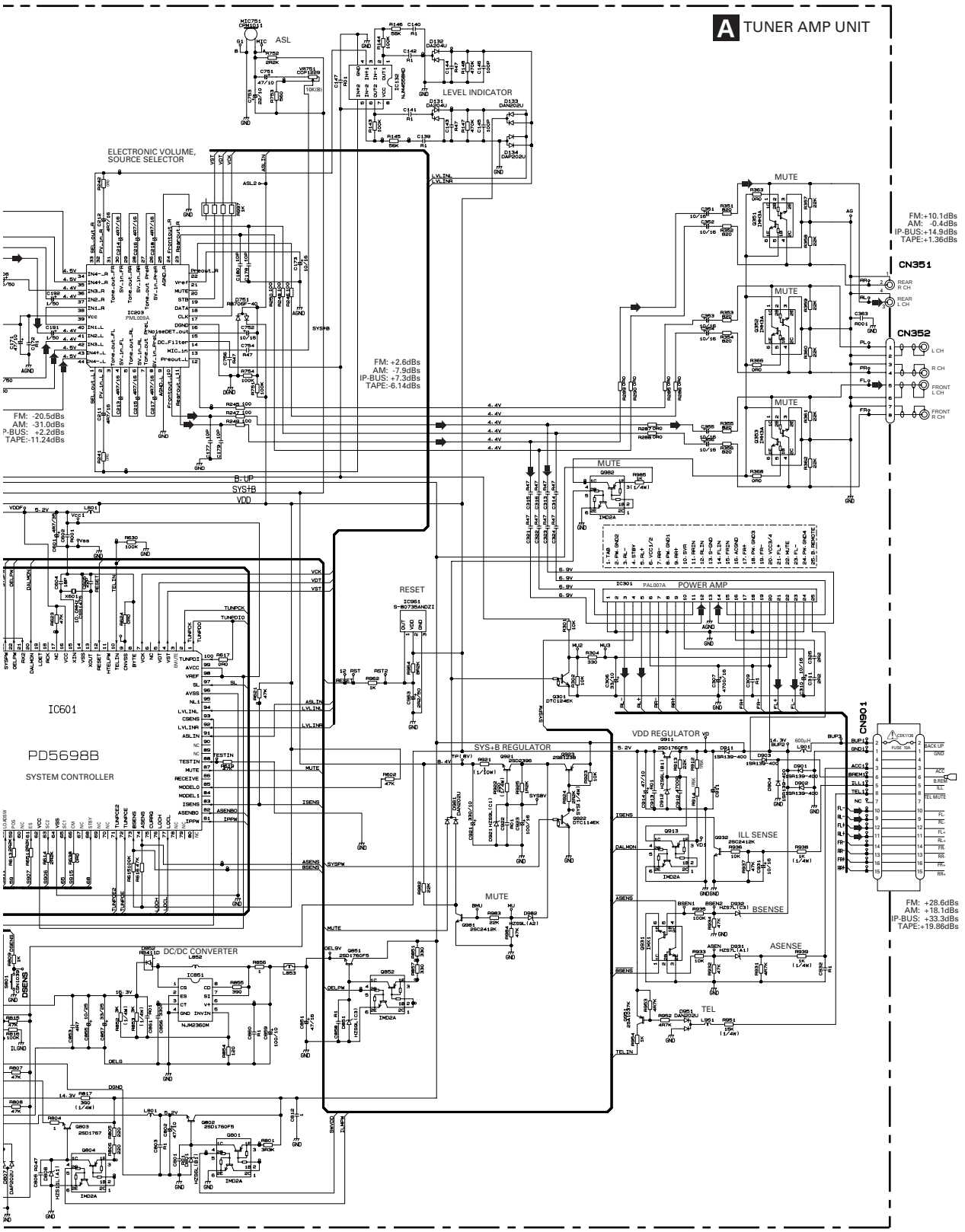

FM: +32.6dBs
AM: +24.1dBs
IP-BUS: +35.3dBs
TAPE:+21.86dBs
CN901
POWER AMP
PAL007A
IC301
VDD REGULATOR
SYS+B REGULATOR
MUTE
TEL
ILL SENSE
BSENSE
ASENSE
RESET
IC961
S-80735ANDZI
DC/DC CONVERTER
IC651
NJM2360M
SYSTEM CONTROLLER
PD5698B
IC601
DSENS
ILGND
A-b
A-a
KEH-P7020R
23

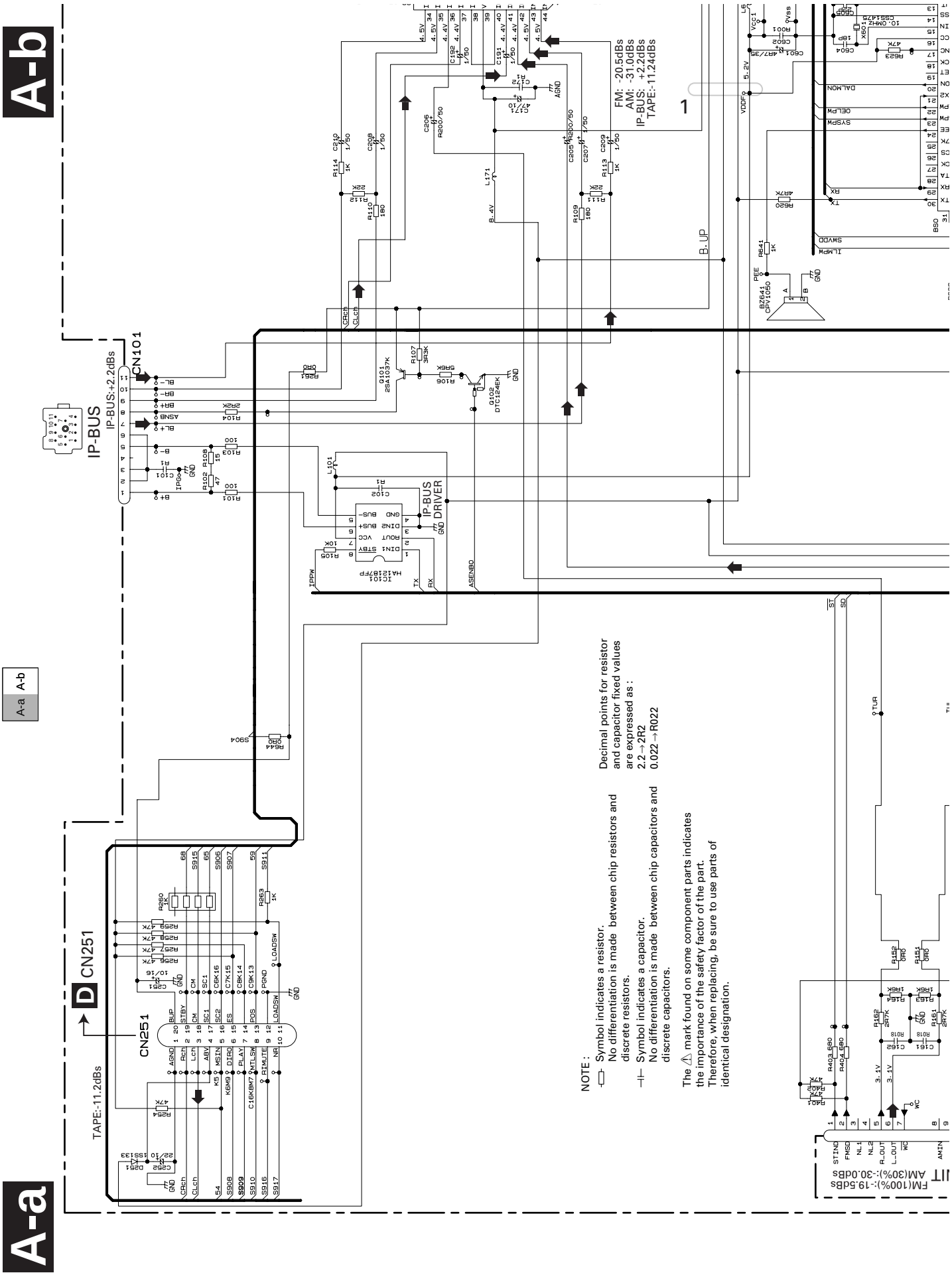
3.4 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)(KEH-P7025/XN/ES)

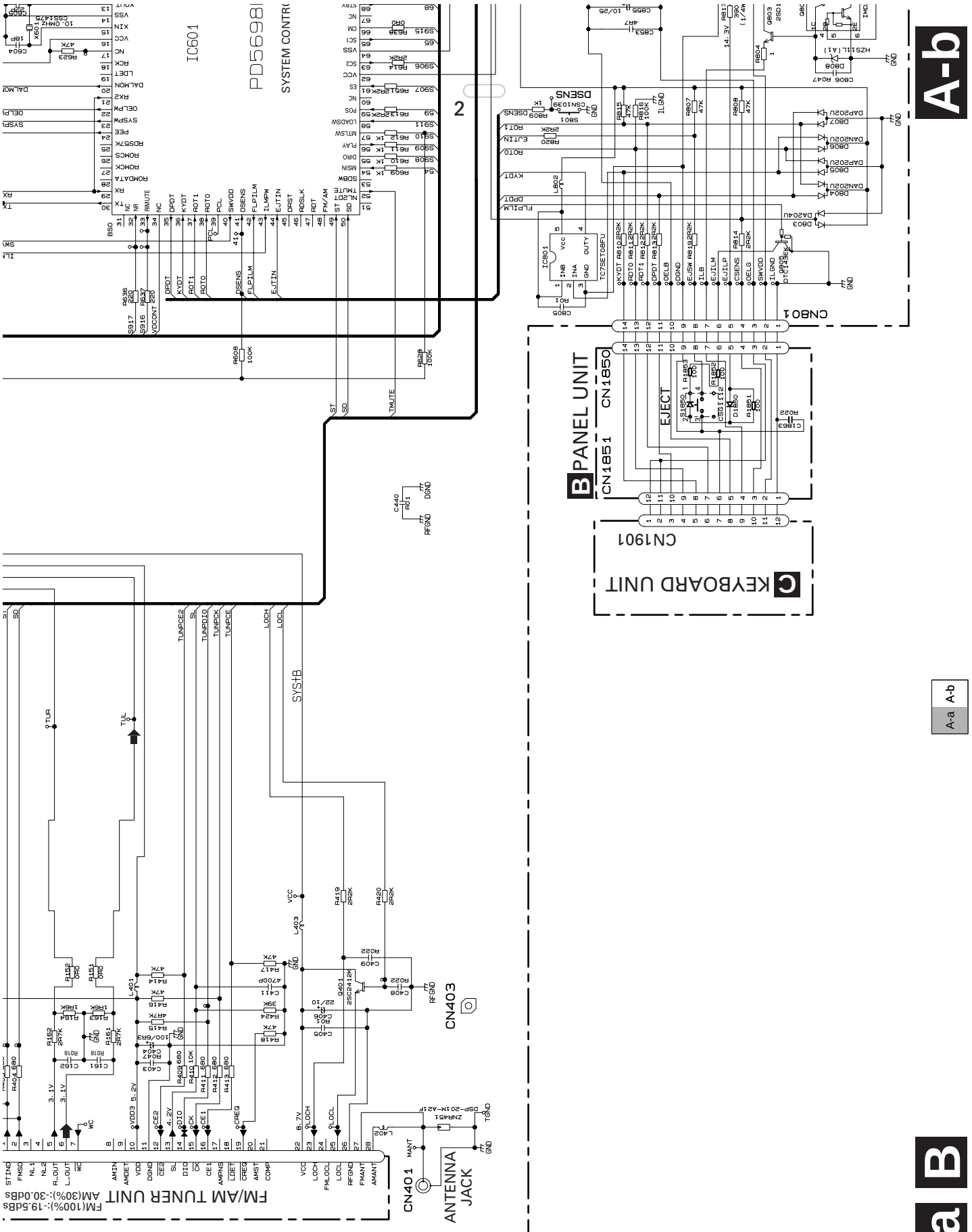


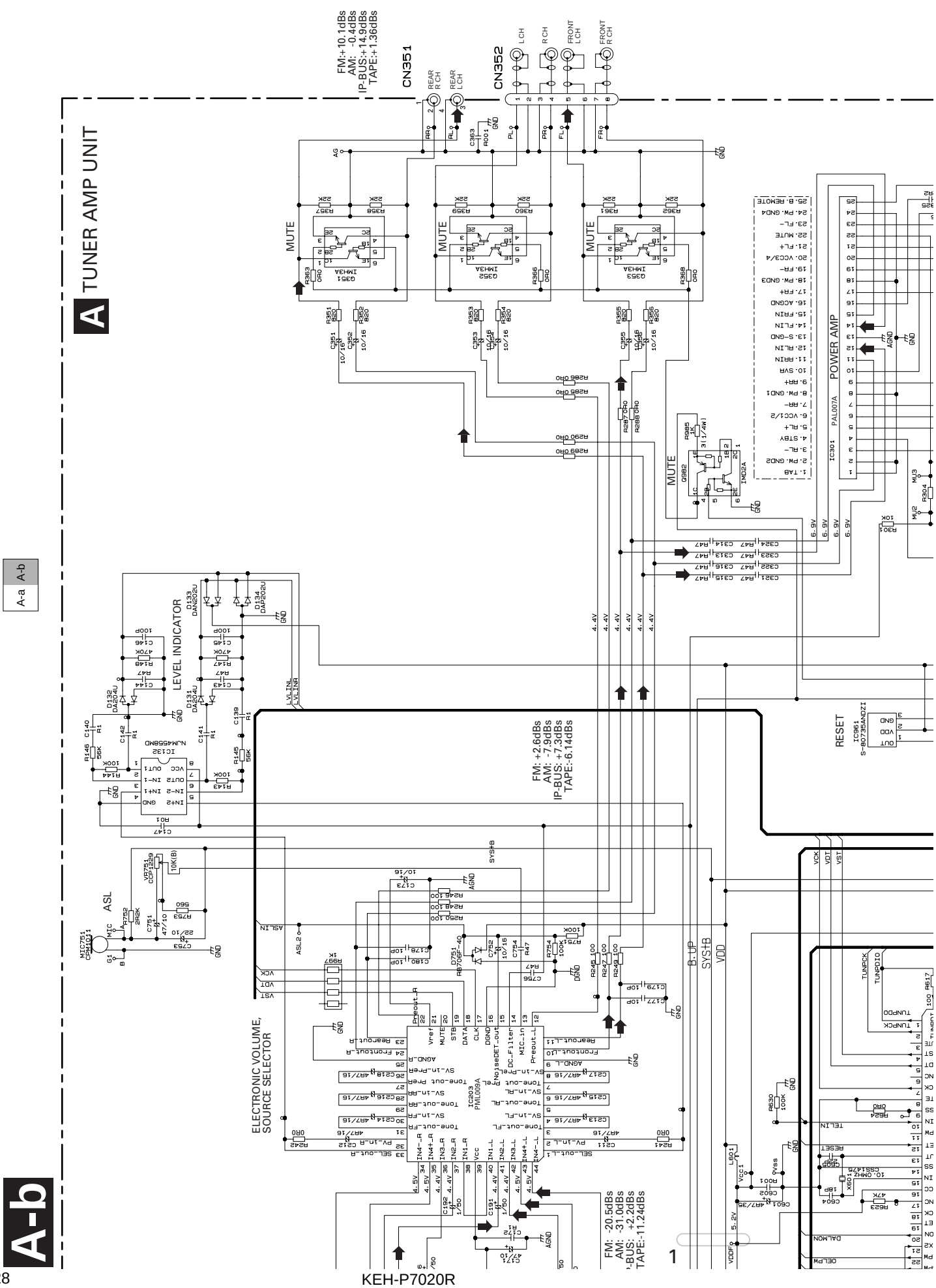
A B

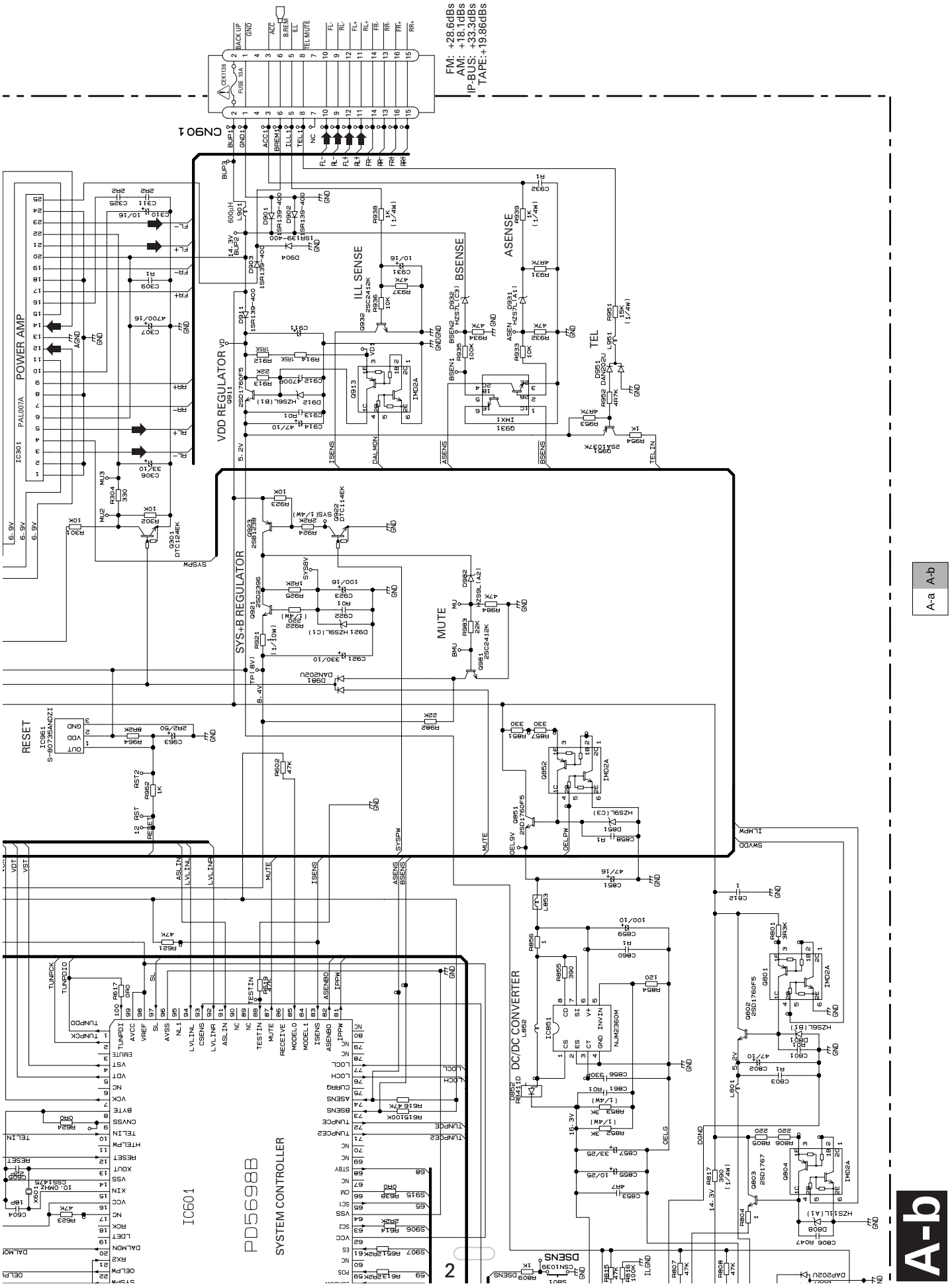
A-b


A TUNER AMP UNIT
ASL
LEVEL INDICATOR
ELECTRONIC VOLUME, SOURCE SELECTOR
MUTE
CN351
CN352
REAR R CH
REAR L CH
L CH
R CH
FRONT L CH
FRONT R CH
FM: +10.1dBs
AM: -0.4dBs
IP-BUS:+14.9dBs
TAPE:+1.36dBs
FM: +2.6dBs
AM: -7.9dBs
IP-BUS: +7.3dBs
TAPE:-6.14dBs
FM: -20.5dBs
AM: -31.0dBs
P-BUS: +2.2dBs
TAPE:-11.24dBs
B-UP
SYS+B
VDD
RESET
POWER AMP
IC601
PD5698B
SYSTEM CONTROLLER
SYS+B REGULATOR
VDD REGULATOR
CN901
ILL SENSE
BSENSE
ASENSE
TEL
DC/DC CONVERTER
FM: +28.6dBs
AM: +18.1dBs
IP-BUS: +33.3dBs
TAPE:+19.86dBs

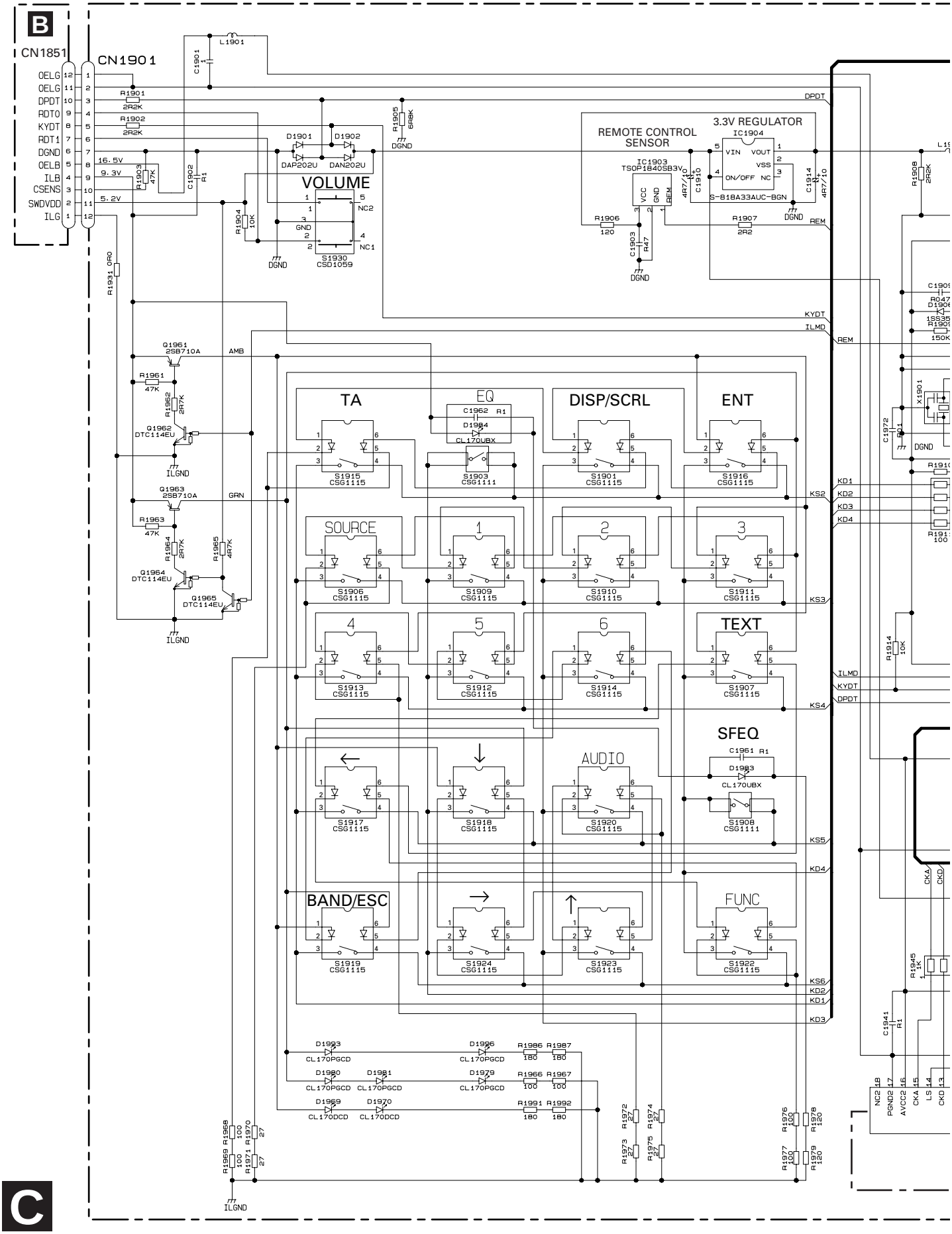

A-b
A-a
IP-BUS
IP-BUS:+2.2dBs
CN101
IP-BUS DRIVER
CN251
TAPE:-11.2dBs
FM: -20.5dBs
AM: -31.0dBs
IP-BUS: +2.2dBs
TAPE:-11.24dBs
B.UP
NOTE :
Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022
FM(100%):-19.5dBs
AM(30%):-30.0dBs


A-b
A-a
B
C
IC601
PD5698I
SYSTEM CONTR
CN801
CN1850
CN1851
PANEL UNIT
EJECT
CN1901
KEYBOARD UNIT
CN403
CN401
ANTENNA JACK
FM/AM TUNER UNIT
FM(100%):-19.5dBs
AM(30%):-30.0dBs
SYSHB
DSENS
KEH-P7020R
27

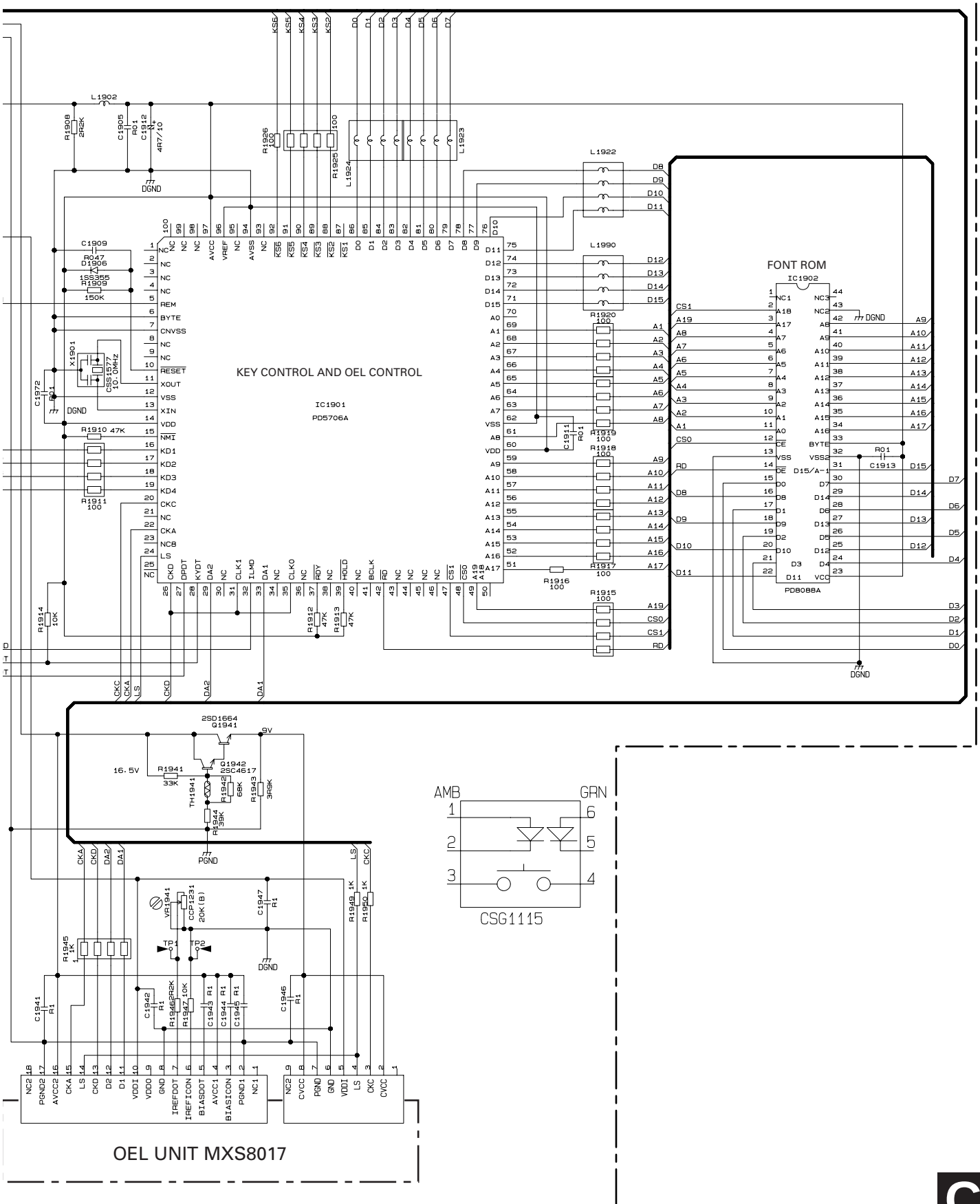

A TUNER AMP UNIT
CN351
CN352
REAR R CH
REAR L CH
L CH
R CH
FRONT L CH
FRONT R CH
FM:+10.1dBs
AM: -0.4dBs
IP-BUS:+14.9dBs
TAPE:+1.36dBs
MUTE
POWER AMP
PAL007A
LEVEL INDICATOR
ASL
ELECTRONIC VOLUME, SOURCE SELECTOR
RESET
FM: +2.6dBs
AM: -7.9dBs
IP-BUS:+7.3dBs
TAPE:-6.14dBs
FM: -20.5dBs
AM: -31.0dBs
IP-BUS: +2.2dBs
TAPE:-11.24dBs
B.UP
SYS+B
VDD
A-b
A-a
A-b


CN901
FM: +28.6dBs
AM: +18.1dBs
IP-BUS: +33.3dBs
TAPE:+19.86dBs
POWER AMP
PAL007A
IC301
VDD REGULATOR
S911
SYS+B REGULATOR
MUTE
TEL
ILL SENSE
BSENSE
ASENSE
RESET
IC961
S-80735ANDZI
DC/DC CONVERTER
IC851
NJM2360M
SYSTEM CONTROLLER
PD5698B
IC601
ISENS
DALMON
ASENS
BSENS
TELIN
DSENS
ILLMPW
SWVDD
SYSPW
MUTE
DELPW
DELG
TUNPCK
TUNPDO
TUNPDI
LOCH
A-a
A-b
A-b

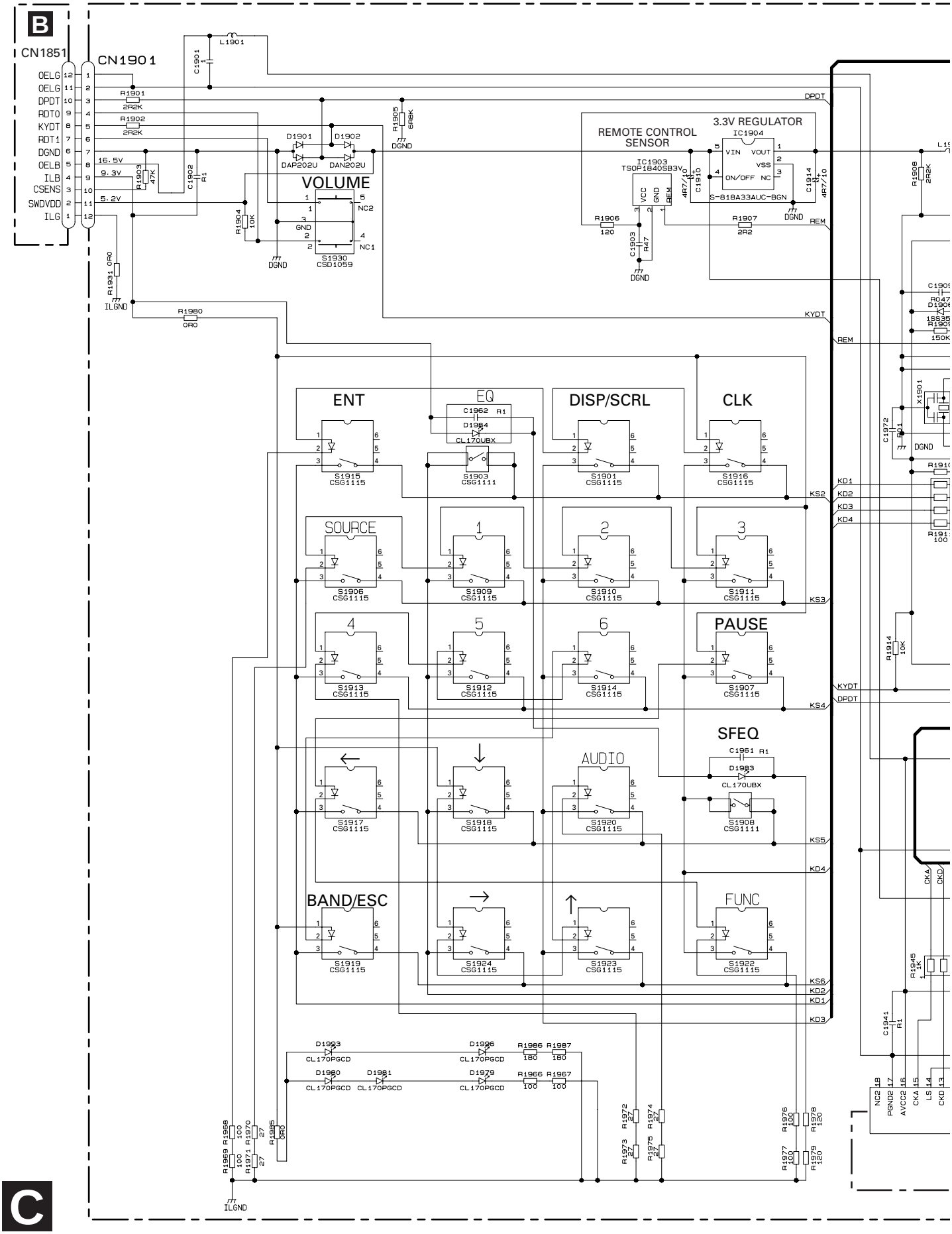
3.5 KEYBOARD UNIT(KEH-P7020R/XN/EW)



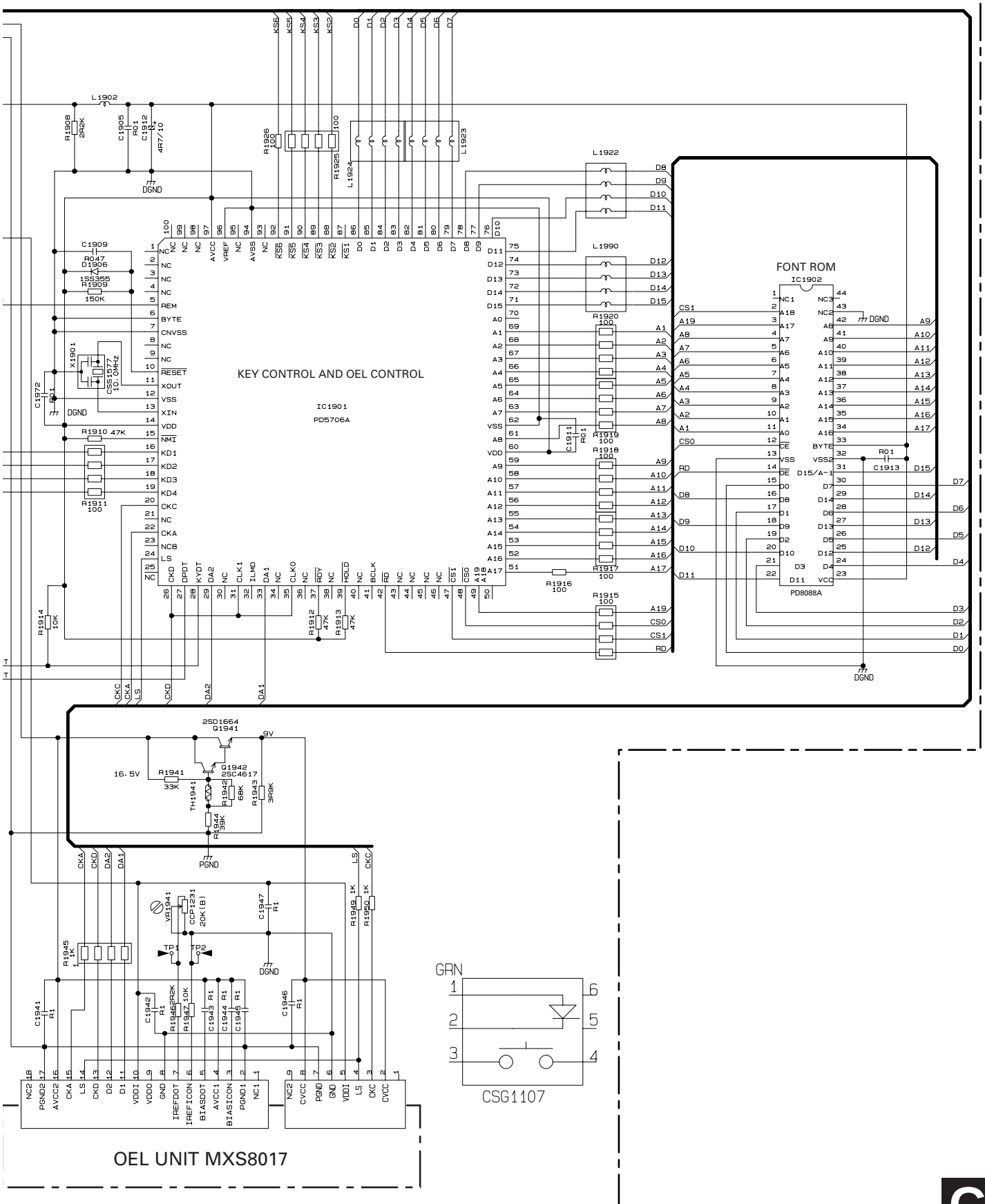
C KEYBOARD UNIT



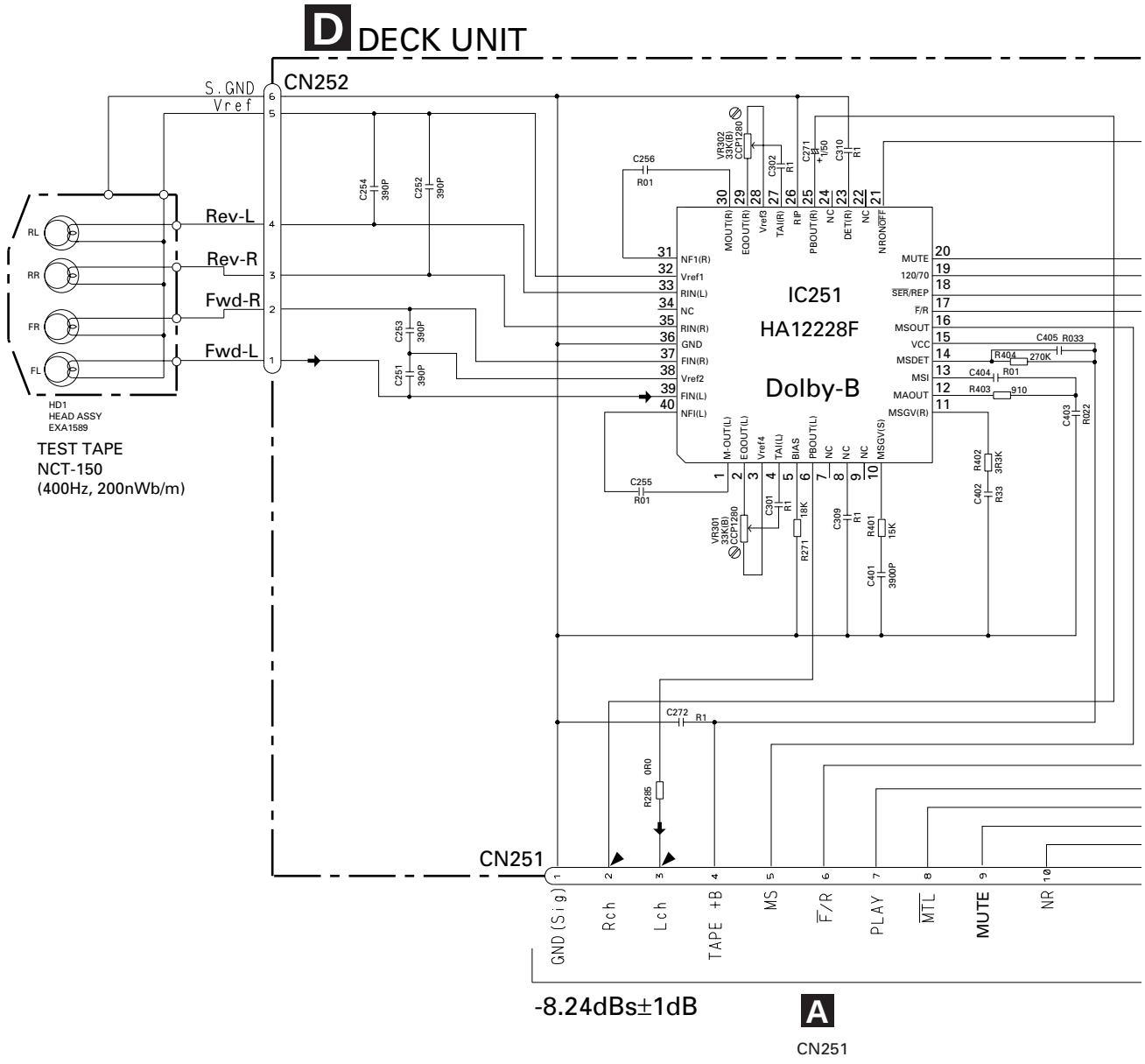
3.6 KEYBOARD UNIT(KEH-P7025/XN/ES)

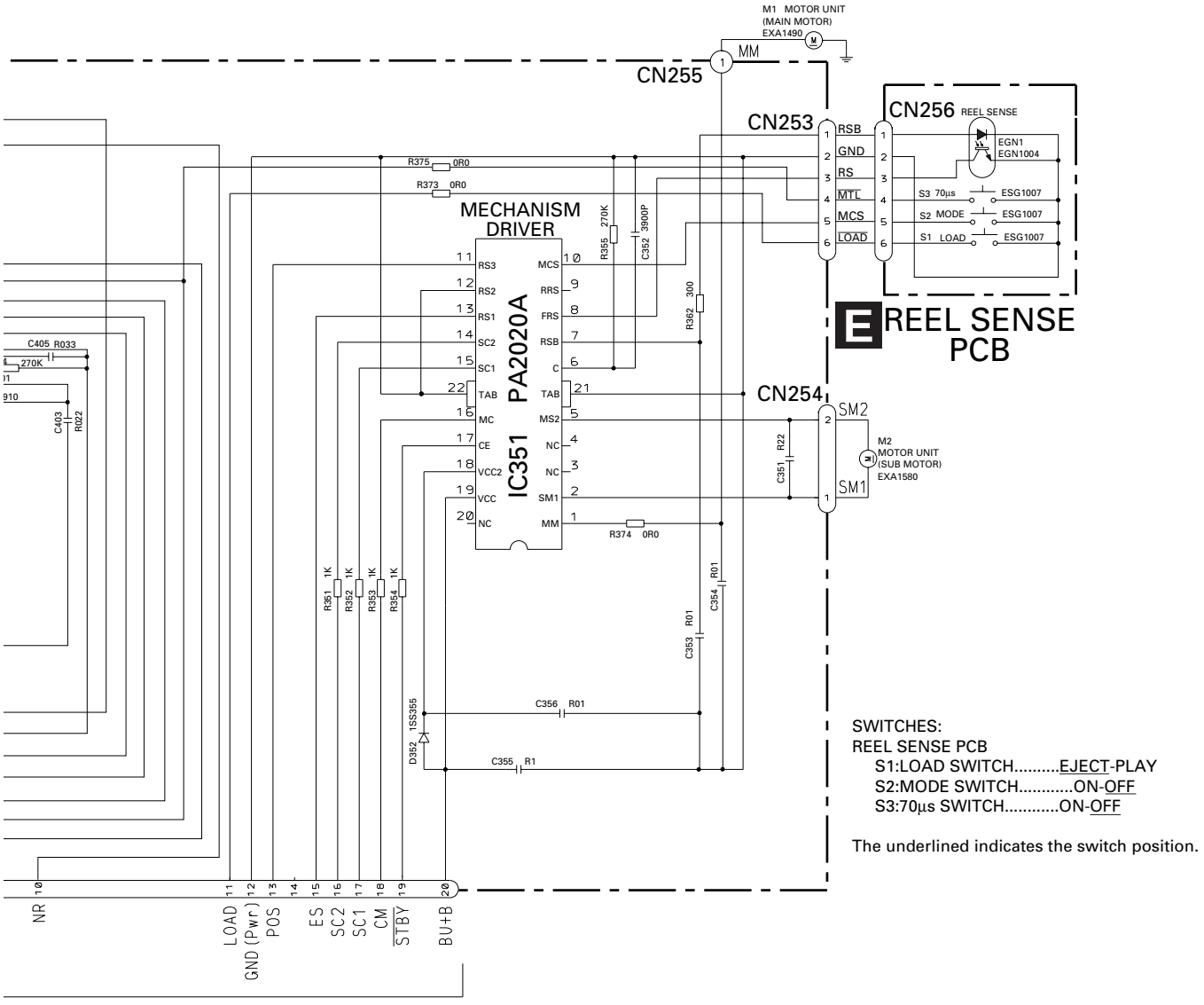


C KEYBOARD UNIT



3.7 CASSETTE MECHANISM MODULE





SWITCHES:
REEL SENSE PCB
S1:LOAD SWITCH.....EJECT-PLAY
S2:MODE SWITCH.....ON-OFF
S3:70µs SWITCH.....ON-OFF

The underlined indicates the switch position.

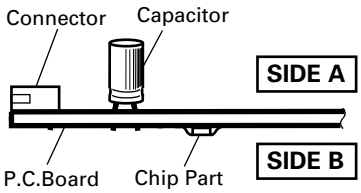
4. PCB CONNECTION DIAGRAM

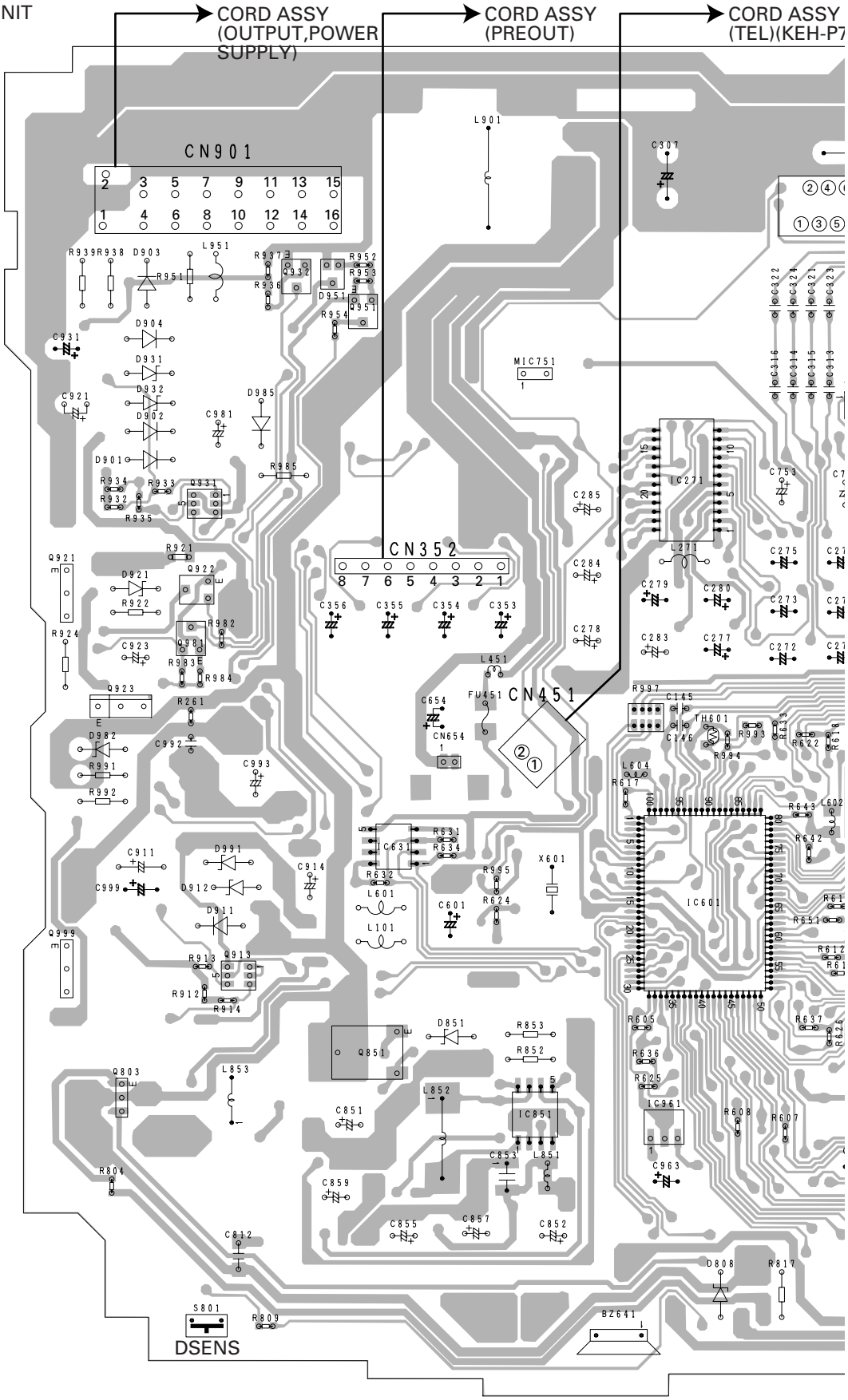
4.1 TUNER AMP UNIT

A TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

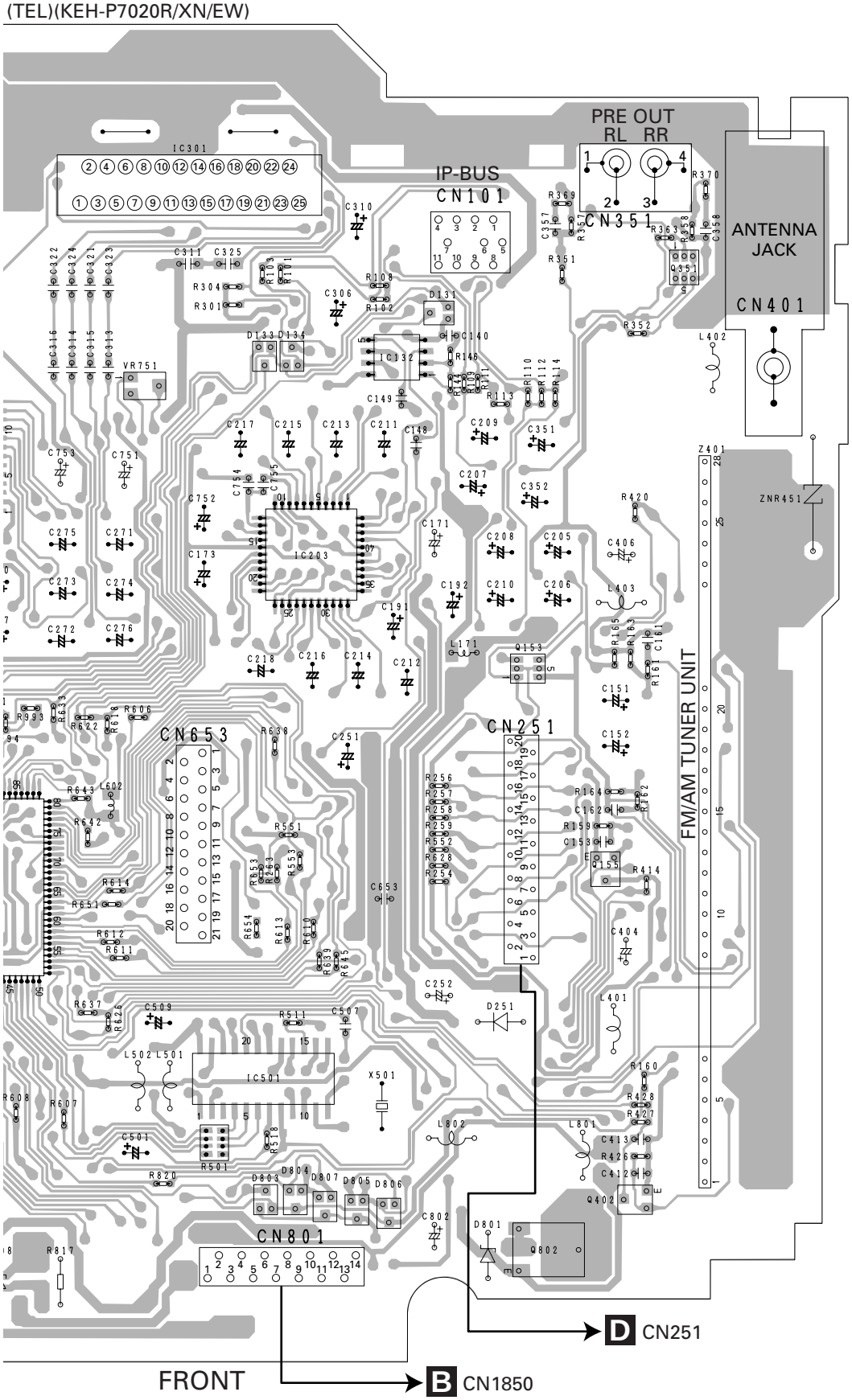
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams





CORD ASSY
(TEL)(KEH-P7020R/XN/EW)

SIDE A



IC,Q

IC301

Q932
Q351
Q951

IC132

IC271 Q931

Q921
Q922 IC203

Q981
Q153
Q923

IC631
Q155
IC601
Q999
Q913

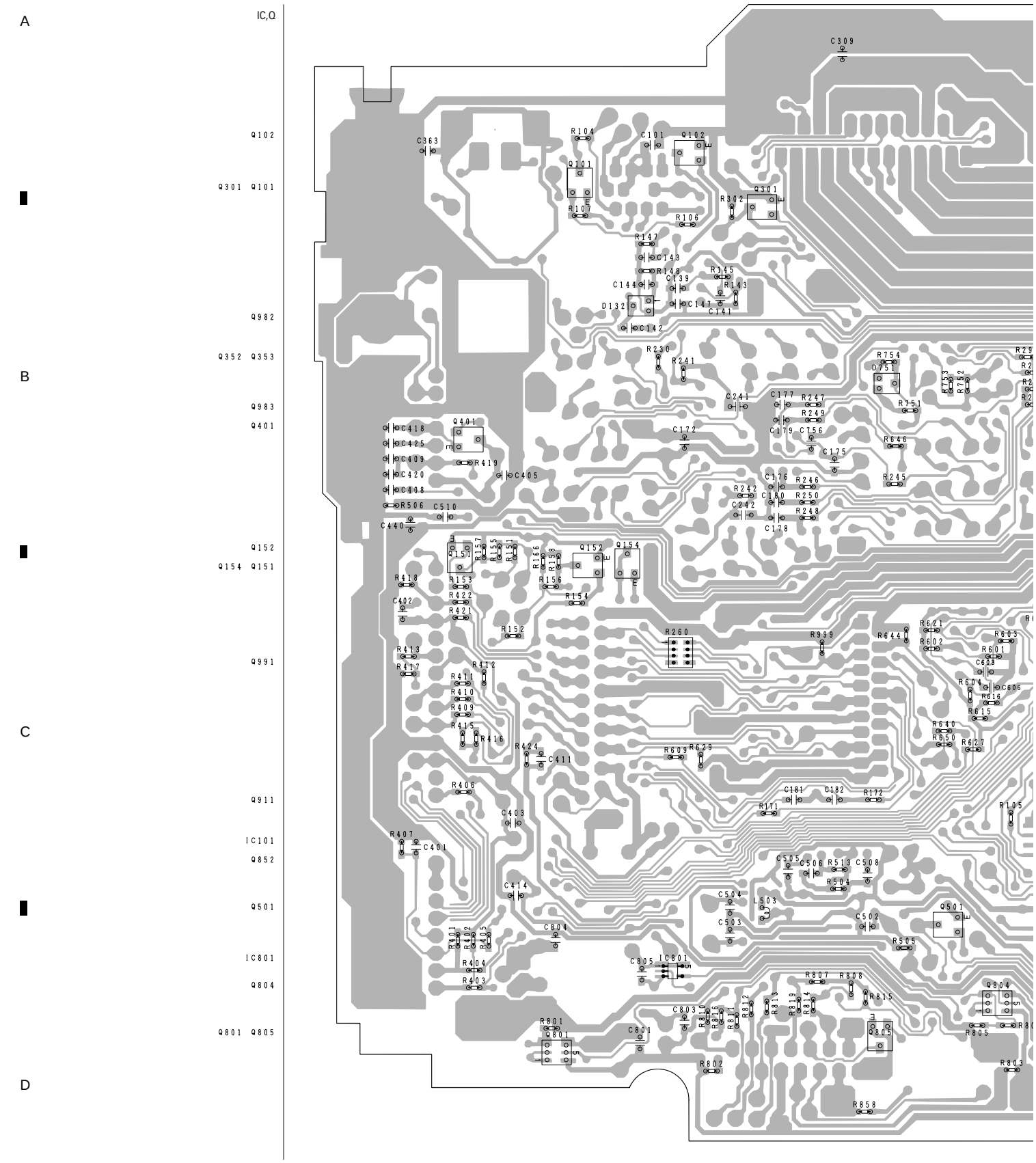
Q851
Q803
IC501 IC961
IC851

Q402

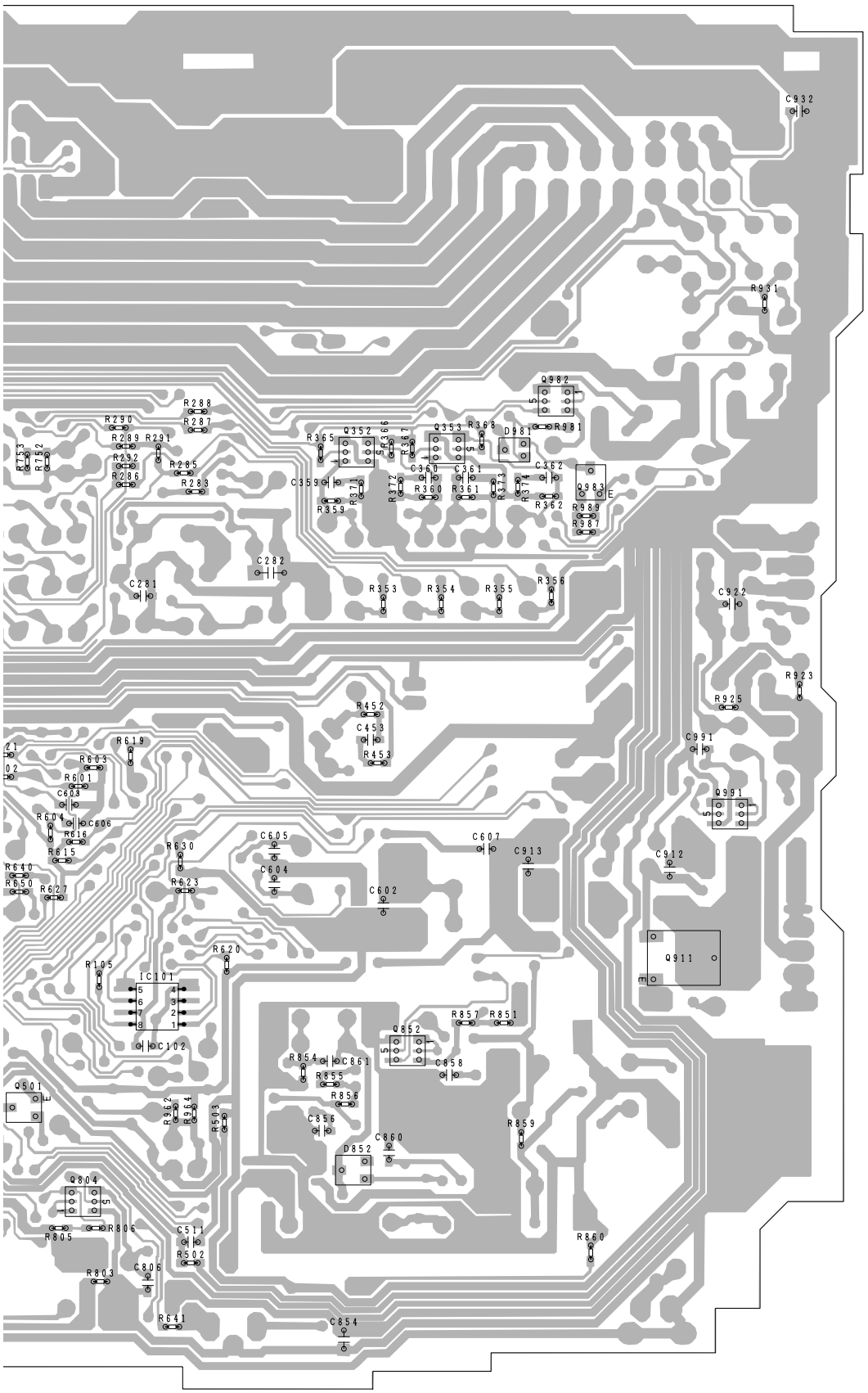
Q802

A B C D

A TUNER AMP UNIT



SIDE B


C932
R931
Q982
R981
D981
R988
R287
R290
R289
R291
R292
R285
R286
R283
R753
R752
R365
Q352
R366
R367
Q353
R368
C359
R371
R372
C360
C361
R360
R361
R373
R374
C362
R362
Q983
R989
R987
C282
C281
R353
R354
R355
R356
C922
R923
R925
R452
C453
R453
C991
Q991
R619
R603
R601
C603
R604
C606
R616
R615
R640
R650
R627
R630
R623
C605
C604
C607
C913
C912
C602
Q911
R620
R105
IC101
C102
R857
R851
Q852
R854
C861
R855
C858
R856
C856
R859
D852
C860
Q501
R962
R964
R503
Q804
R805
R806
C511
R502
R803
C806
R641
C854
R860

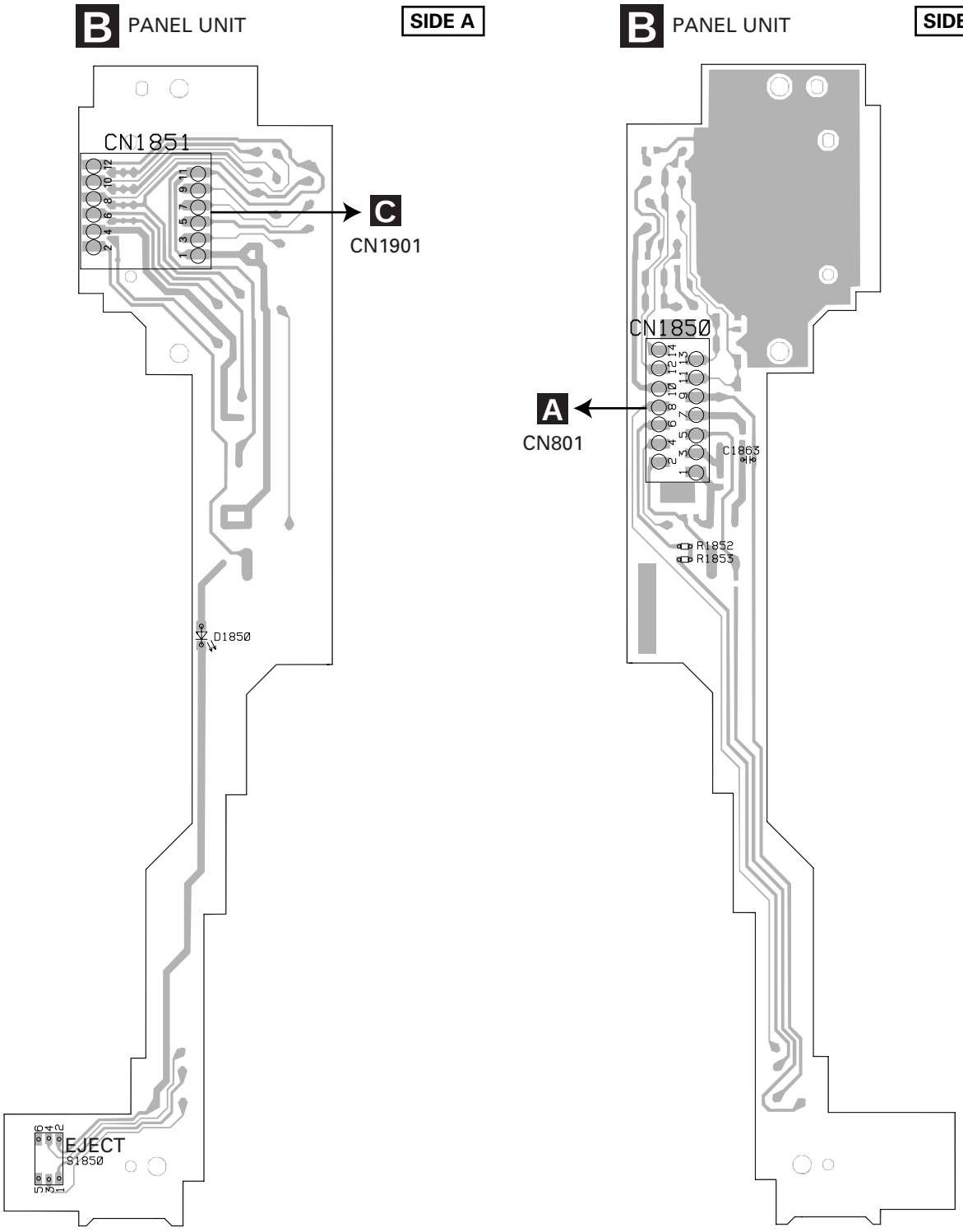
A

B

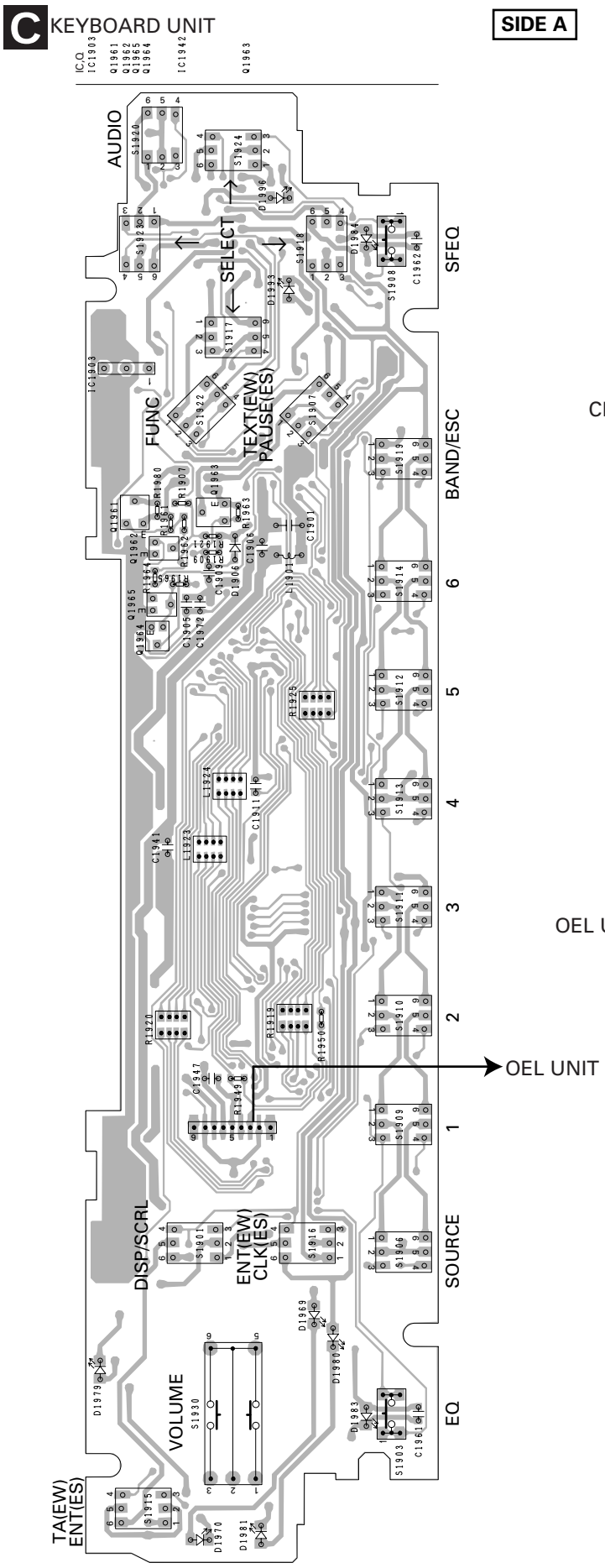
C

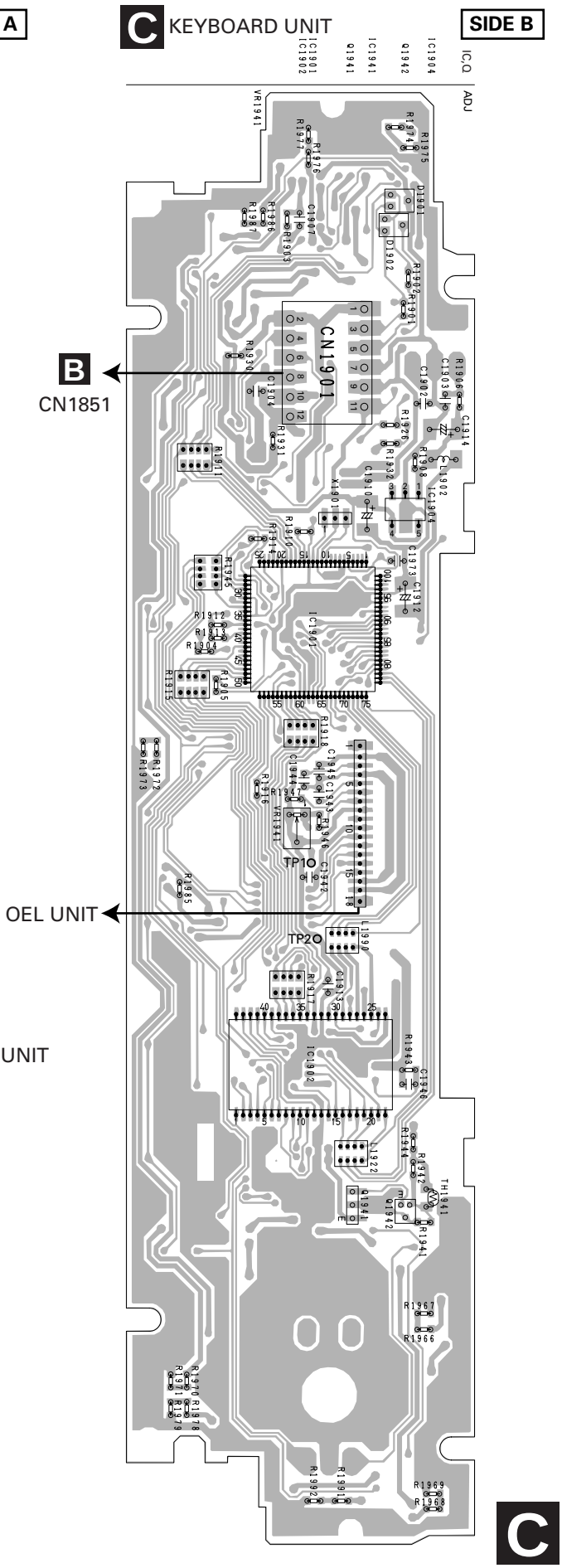
D

4.2 PANEL UNIT

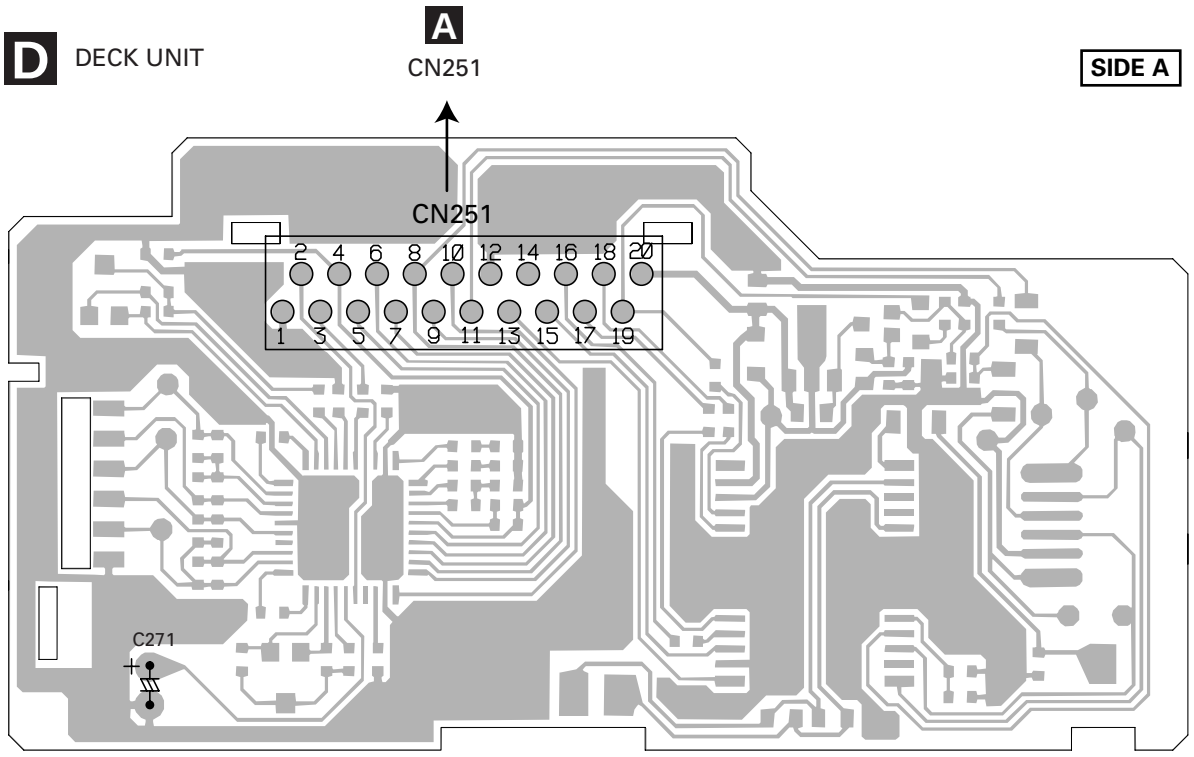


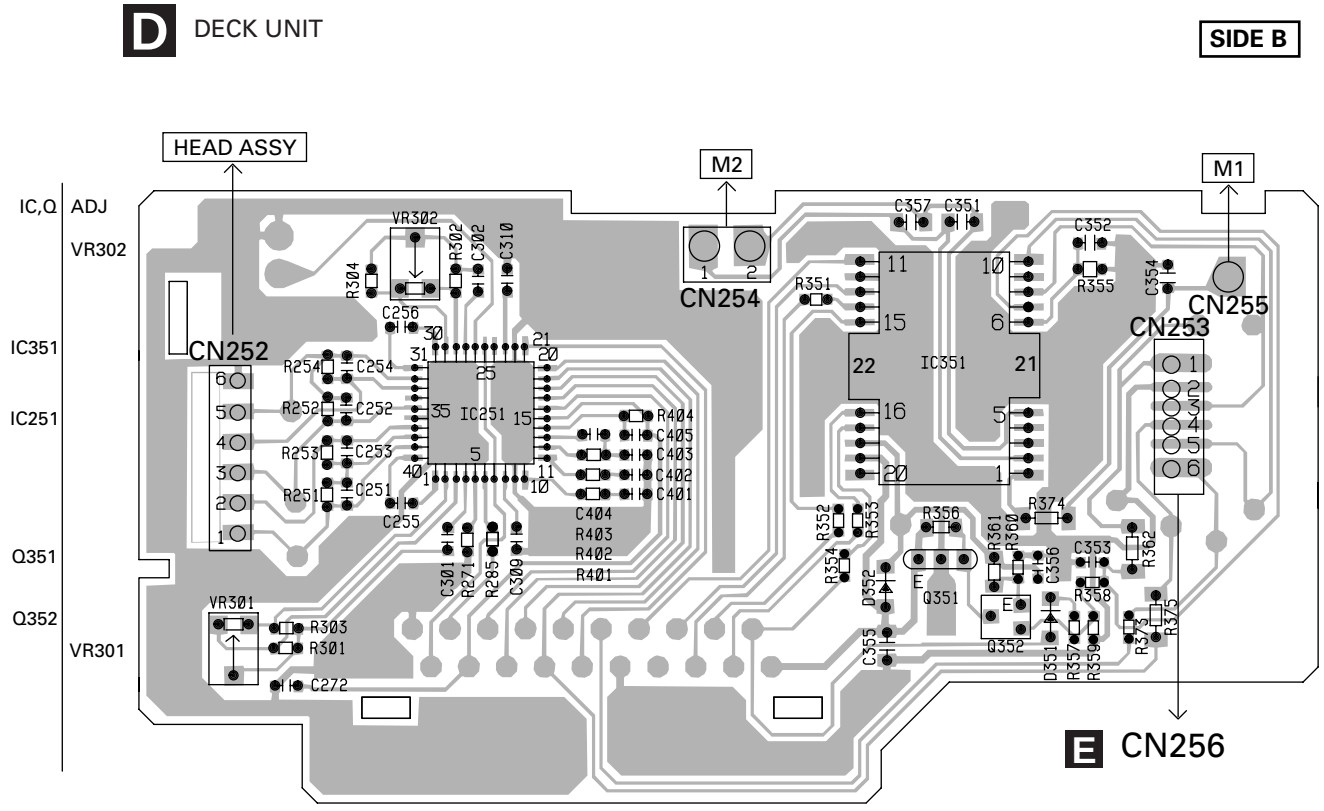
4.3 KEYBOARD UNIT





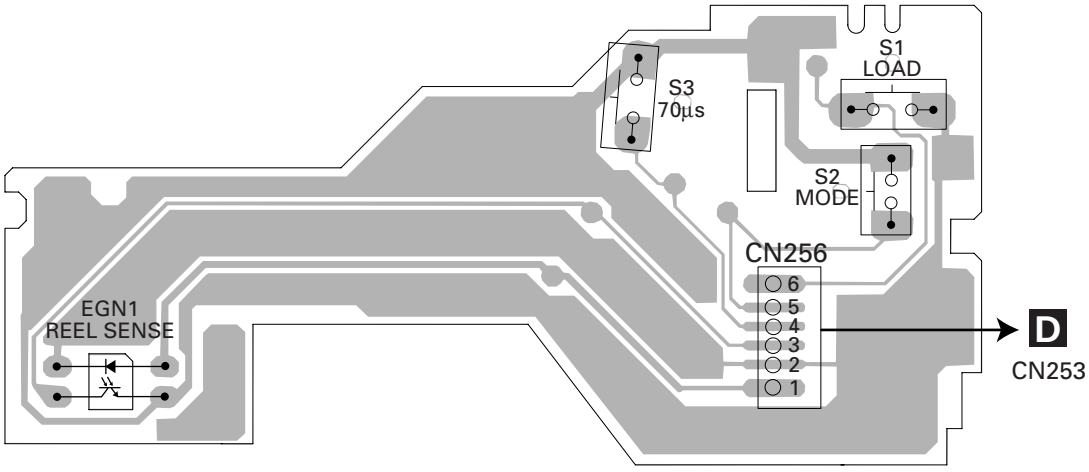
4.4 CASSETTE MECHANISM MODULE





D

E REEL SENSE PCB



5. ELECTRICAL PARTS LIST

NOTE:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/◯S◯◯◯J,RS1/◯◯S◯◯◯J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

A

Unit Number:CWM7985(KEH-P7020R/XN/EW)

Unit Name:Tuner Amp Unit

MISCELLANEOUS

Circuit Symbol and No.	Part Name	Part No.
IC 101	IC	HA12187FP
IC 132	IC	NJM4558MD
IC 203	IC	PML009A
IC 301	IC	PAL007A
IC 501	IC	PM4009A
IC 601	IC	PD5698B
IC 631	IC	PDH0046A
IC 801	IC	TC7SET08FU
IC 851	IC	NJM2360M
IC 961	IC	S-80735ANDZI
Q 101	Transistor	2SA1037K
Q 102	Transistor	DTC124EK
Q 151	Transistor	2SD1757K
Q 152	Transistor	2SD1757K
Q 153	Transistor	IMH3A
Q 155	Transistor	2SC2412K
Q 301	Transistor	DTC124EK
Q 351	Transistor	IMH3A
Q 352	Transistor	IMH3A
Q 353	Transistor	IMH3A
Q 401	Transistor	2SC2412K
Q 402	Transistor	2SC2412K
Q 501	Transistor	DTA124EK
Q 801	Transistor	IMD2A
Q 802	Transistor	2SD1760F5
Q 803	Transistor	2SD1767
Q 804	Transistor	IMD2A
Q 805	Transistor	DTC143EK
Q 851	Transistor	2SD1760F5
Q 852	Transistor	IMD2A
Q 911	Transistor	2SD1760F5
Q 913	Transistor	IMD2A
Q 921	Transistor	2SD2396
Q 922	Transistor	DTC114EK
Q 923	Transistor	2SB1238
Q 931	Transistor	IMX1
Q 932	Transistor	2SC2412K
Q 951	Transistor	2SA1037K
Q 981	Transistor	2SC2412K
Q 982	Transistor	IMD2A
D 131	Diode Network	DA204U
D 132	Diode Network	DA204U
D 133	Diode	DAN202U
D 134	Diode	DAP202U
D 251	Diode	1SS133
D 751	Diode	RB706F-40
D 801	Diode	HZS6L(B1)
D 803	Diode Network	DA204U
D 804	Diode	DAN202U
D 805	Diode	DAP202U
D 806	Diode	DAN202U
D 807	Diode	DAP202U
D 808	Diode	HZS11L(A1)
D 851	Diode	HZS9L(C3)
D 852	Diode	RB411D
D 901	Diode	1SR139-400
D 902	Diode	1SR139-400
D 903	Diode	1SR139-400
D 904	Diode	1SR139-400
D 911	Diode	1SR139-400
D 912	Diode	HZS6L(B1)
D 921	Diode	HZS9L(C1)
D 931	Diode	HZS7L(A1)
D 932	Diode	HZS7L(C3)
D 951	Diode	DAN202U
D 981	Diode	DAN202U
D 982	Diode	HZS9L(A2)
ZNR451	Surge Protector	DSP-201M-A21F
L 171	Inductor	CTF1530
L 401	Ferri-Inductor	LAU2R2K
L 402	Ferri-Inductor	LAU4R7K
L 403	Inductor	LAU1R0K
L 451	Inductor	CTF1378
L 501	Ferri-Inductor	LAU101K
L 502	Ferri-Inductor	LAU2R2K
L 503	Inductor	CTF1378
L 601	Ferri-Inductor	LAU2R2K
L 801	Inductor	LAU100K
L 802	Ferri-Inductor	LAU2R2K
L 852	Inductor	CTF1510

Circuit Symbol and No.	Part Name	Part No.
L 853	Inductor	CTF1489
L 901	Choke Coil 600µH	CTH1221
L 951	Ferri-Inductor	LAU2R2K
X 501	Crystal Resonator 3.648MHz	CSS1447
X 601	Radiator 10.00MHz	CSS1475
S 801	Switch(DSENS)	CSN1039
VR 751	Semi-fixed 10kΩ(B)	CCP1229
FU 451	Fuse 200mA	CEK1189
MIC751	Microphone	CPM1011
	FM/AM Tuner Unit	CWE1562
BZ 641	Buzzer	CPV1050

RESISTORS

R 101		RS1/16S101J
R 102		RS1/16S470J
R 103		RS1/16S101J
R 104		RS1/16S222J
R 105		RS1/16S103J
R 106		RS1/16S562J
R 107		RS1/16S332J
R 108		RS1/16S150J
R 109		RS1/16S181J
R 110		RS1/16S181J
R 111		RS1/16S223J
R 112		RS1/16S223J
R 113		RS1/16S102J
R 114		RS1/16S102J
R 143		RS1/16S104J
R 144		RS1/16S104J
R 145		RS1/16S563J
R 146		RS1/16S563J
R 147		RS1/16S474J
R 148		RS1/16S474J
R 153		RS1/16S224J
R 154		RS1/16S224J
R 155		RS1/16S222J
R 156		RS1/16S222J
R 157		RS1/16S223J
R 158		RS1/16S223J
R 159		RS1/16S224J
R 160		RS1/16S473J
R 161		RS1/16S162J
R 162		RS1/16S162J
R 163		RS1/16S272J
R 164		RS1/16S272J
R 165		RS1/16S104J
R 166		RS1/16S104J
R 230		RS1/16S0R0J
R 241		RS1/16S0R0J
R 242		RS1/16S0R0J
R 245		RS1/16S101J
R 246		RS1/16S101J
R 247		RS1/16S101J
R 248		RS1/16S101J
R 249		RS1/16S101J
R 250		RS1/16S101J
R 254		RS1/16S473J
R 256		RS1/16S473J

Circuit Symbol and No.	Part Name	Part No.
R 257		RS1/16S473J
R 258		RS1/16S473J
R 259		RS1/16S473J
R 260		RAB4C102J
R 261		RS1/16S0R0J
R 263		RS1/16S102J
R 285		RS1/16S0R0J
R 286		RS1/16S0R0J
R 287		RS1/16S0R0J
R 288		RS1/16S0R0J
R 289		RS1/16S0R0J
R 290		RS1/16S0R0J
R 301		RS1/16S103J
R 302		RS1/16S103J
R 304		RS1/16S331J
R 351		RS1/16S821J
R 352		RS1/16S821J
R 353		RS1/16S821J
R 354		RS1/16S821J
R 355		RS1/16S821J
R 356		RS1/16S821J
R 357		RS1/16S223J
R 358		RS1/16S223J
R 359		RS1/16S223J
R 360		RS1/16S223J
R 361		RS1/16S223J
R 362		RS1/16S223J
R 363		RS1/16S0R0J
R 366		RS1/16S0R0J
R 368		RS1/16S0R0J
R 401		RS1/16S473J
R 402		RS1/16S473J
R 403		RS1/16S681J
R 404		RS1/16S681J
R 405		RS1/16S681J
R 406		RS1/16S102J
R 407		RS1/16S473J
R 409		RS1/16S681J
R 410		RS1/16S103J
R 411		RS1/16S681J
R 412		RS1/16S681J
R 413		RS1/16S681J
R 414		RS1/16S473J
R 415		RS1/16S472J
R 416		RS1/16S473J
R 417		RS1/16S473J
R 418		RS1/16S473J
R 419		RS1/16S222J
R 420		RS1/16S222J
R 421		RS1/16S681J
R 422		RS1/16S681J
R 424		RS1/16S393J
R 426		RS1/16S153J
R 427		RS1/16S474J
R 428		RS1/16S681J
R 452		RS1/16S102J
R 453		RS1/16S0R0J
R 501		RAB4C102J
R 503		RS1/16S0R0J
R 506		RS1/16S0R0J

Circuit Symbol and No.	Part Name	Part No.
R 511		RS1/16S102J
R 513		RS1/16S225J
R 518		RS1/16S681J
R 601		RS1/16S473J
R 607		RS1/16S0R0J
R 608		RS1/16S104J
R 609		RS1/16S102J
R 610		RS1/16S102J
R 611		RS1/16S102J
R 612		RS1/16S102J
R 613		RS1/16S222J
R 614		RS1/16S222J
R 615		RS1/16S104J
R 616		RS1/16S473J
R 617		RS1/16S0R0J
R 619		RS1/16S473J
R 620		RS1/16S472J
R 621		RS1/16S473J
R 623		RS1/16S473J
R 624		RS1/16S0R0J
R 628		RS1/16S103J
R 630		RS1/16S104J
R 631		RS1/16S102J
R 632		RS1/16S104J
R 634		RS1/16S473J
R 636		RS1/16S221J
R 637		RS1/16S221J
R 638		RS1/16S0R0J
R 641		RS1/16S102J
R 651		RS1/16S222J
R 751		RS1/16S104J
R 752		RS1/16S222J
R 753		RS1/16S561J
R 754		RS1/16S104J
R 801		RS1/16S332J
R 804		RS1/16S1R0J
R 805		RS1/16S221J
R 806		RS1/16S221J
R 807		RS1/16S473J
R 808		RS1/16S473J
R 809		RS1/16S102J
R 810		RS1/16S222J
R 811		RS1/16S222J
R 812		RS1/16S222J
R 813		RS1/16S222J
R 814		RS1/16S222J
R 815		RS1/16S473J
R 816		RS1/16S104J
R 817		RD1/4PU391J
R 819		RS1/16S222J
R 820		RS1/16S222J
R 851		RS1/16S331J
R 852		RD1/4PU302J
R 853		RD1/4PU302J
R 854		RS1/16S121J
R 855		RS1/16S391J
R 856		RS1/16S1R0J
R 857		RS1/16S331J
R 912		RS1/16S152J
R 913		RS1/16S223J
R 914		RS1/16S152J
R 921		RS1/10S1R0J
R 922		RD1/4PU221J
R 923		RS1/16S103J
R 924		RD1/4PU222J
R 925		RS1/16S122J
R 931		RS1/16S472J
R 932		RS1/16S473J
R 933		RS1/16S103J
R 934		RS1/16S473J
R 935		RS1/16S104J
R 936		RS1/16S103J
R 937		RS1/16S473J
R 938		RD1/4PU102J
R 939		RD1/4PU102J
R 951		RD1/4PU153J
R 952		RS1/16S472J
R 953		RS1/16S472J
R 954		RS1/16S102J
R 962		RS1/16S102J
R 964		RS1/16S822J
R 982		RS1/16S223J
R 983		RS1/16S223J
R 984		RS1/16S473J
R 985		RD1/4PU102J
R 997		RAB4C102J

CAPACITORS

Circuit Symbol and No.	Part Name	Part No.
C 101		CKSRYB104K16
C 102		CKSRYB104K16
C 139		CKSRYB104K16
C 140		CKSRYB104K16
C 141		CKSRYB104K16
C 142		CKSRYB104K16
C 143		CKSRYB474K10
C 144		CKSRYB474K10
C 145		CCSRCH101J50
C 146		CCSRCH101J50
C 147		CKSRYB103K50
C 151		CEJQ1R0M50
C 152		CEJQ1R0M50
C 153		CKSRYB223K25
C 161		CKSRYB123K25
C 162		CKSRYB123K25
C 171		CEJQ470M10
C 172		CKSRYB104K16
C 173		CEJQ100M16
C 177		CCSRCH100D50
C 178		CCSRCH100D50
C 179		CCSRCH100D50
C 180		CCSRCH100D50
C 191		CEJQ1R0M50
C 192		CEJQ1R0M50
C 205		CEJQR22M50
C 206		CEJQR22M50
C 207		CEJQ1R0M50
C 208		CEJQ1R0M50
C 209		CEJQ1R0M50

Circuit Symbol and No.	Part Name	Part No.
C 210		CEJQ1R0M50
C 211		CEJQNP4R7M16
C 212		CEJQNP4R7M16
C 213		CEJQNP4R7M16
C 214		CEJQNP4R7M16
C 215		CEJQNP4R7M16
C 216		CEJQNP4R7M16
C 217		CEJQNP4R7M16
C 218		CEJQNP4R7M16
C 251		CEJQ100M16
C 252		CEJQ220M10
C 306		CEHAR330M10
C 307	4700µF/16V	CCH1367
C 309		CKSRYB104K16
C 310		CEHAR100M16
C 311		CKSQYB225K10
C 313		CKSRYB474K10
C 314		CKSRYB474K10
C 315		CKSRYB474K10
C 316		CKSRYB474K10
C 321		CKSRYB474K10
C 322		CKSRYB474K10
C 323		CKSRYB474K10
C 324		CKSRYB474K10
C 325		CKSQYB225K10
C 351		CEJQ100M16
C 352		CEJQ100M16
C 353		CEJQ100M16
C 354		CEJQ100M16
C 355		CEJQ100M16
C 356		CEJQ100M16
C 401		CKSRYB182K50
C 403		CKSRYB473K25
C 404		CEJQ101M6R3
C 405		CKSRYB103K50
C 406		CEJQ220M10
C 408		CKSRYB223K50
C 409		CKSRYB223K50
C 411		CKSRYB472K50
C 413		CKSRYB472K50
C 425		CKSRYB102K50
C 440		CKSRYB103K50
C 453		CKSRYB224K16
C 501		CEJQ220M6R3
C 502		CKSRYB104K16
C 503		CCSRCH270J50
C 504		CCSRCH270J50
C 505		CKSRYB104K16
C 506		CKSRYB471K50
C 507		CKSRYB471K50
C 508		CKSRYB104K16
C 509		CEJQ220M6R3
C 510		CCSRCH101J50
C 511		CKSRYB102K50
C 601		CEJQ4R7M35
C 602		CKSRYB102K50
C 604		CCSRCH180J50
C 605		CCSRCH220J50
C 751		CEJQ100M16
C 752		CEJQ100M16

Circuit Symbol and No.	Part Name	Part No.
C 753		CEJQ220M10
C 754		CKSRYB474K10
C 756		CKSRYB474K10
C 801		CKSRYB103K50
C 802		CEJQ470M10
C 803		CKSRYB104K16
C 805		CKSRYB103K25
C 806		CKSRYB473K25
C 812		CKSYB105K25
C 851		CEJQ470M16
C 853	4.7µF	CCG1111
C 855		CEJQ100M25
C 856		CCSRCH331J50
C 857		CEJQ330M25
C 858		CKSRYB104K16
C 859		CEJQ101M10
C 860		CKSRYB104K16
C 861		CKSRYB103K50
C 911	470µF/16V	CCH1183
C 912		CKSRYB472K50
C 913		CKSRYB103K50
C 914		CEJQ470M10
C 921	330µF/10V	CCH1181
C 922		CKSRYB103K50
C 923		CEJQ101M16
C 931		CEJQ100M16
C 932		CKSRYB104K16
C 963		CEJQ2R2M50

A

Unit Number:CWM8125(KEH-P7025/XN/ES)

Unit Name:Tuner Amp Unit

MISCELLANEOUS

IC 101	IC	HA12187FP
IC 132	IC	NJM4558MD
IC 203	IC	PML009A
IC 301	IC	PAL007A
IC 601	IC	PD5698B
IC 801	IC	TC7SET08FU
IC 851	IC	NJM2360M
IC 961	IC	S-80735ANDZI
Q 101	Transistor	2SA1037K
Q 102	Transistor	DTC124EK
Q 301	Transistor	DTC124EK
Q 351	Transistor	IMH3A
Q 352	Transistor	IMH3A
Q 353	Transistor	IMH3A
Q 401	Transistor	2SC2412K
Q 801	Transistor	IMD2A
Q 802	Transistor	2SD1760F5
Q 803	Transistor	2SD1767
Q 804	Transistor	IMD2A
Q 805	Transistor	DTC143EK

Circuit Symbol and No.	Part Name	Part No.
Q 851	Transistor	2SD1760F5
Q 852	Transistor	IMD2A
Q 911	Transistor	2SD1760F5
Q 913	Transistor	IMD2A
Q 921	Transistor	2SD2396
Q 922	Transistor	DTC114EK
Q 923	Transistor	2SB1238
Q 931	Transistor	IMX1
Q 932	Transistor	2SC2412K
Q 951	Transistor	2SA1037K
Q 981	Transistor	2SC2412K
Q 982	Transistor	IMD2A
D 131	Diode Network	DA204U
D 132	Diode Network	DA204U
D 133	Diode	DAN202U
D 134	Diode	DAP202U
D 251	Diode	1SS133
D 751	Diode	RB706F-40
D 801	Diode	HZS6L(B1)
D 803	Diode Network	DA204U
D 804	Diode	DAN202U
D 805	Diode	DAP202U
D 806	Diode	DAN202U
D 807	Diode	DAP202U
D 808	Diode	HZS11L(A1)
D 851	Diode	HZS9L(C3)
D 852	Diode	RB411D
D 901	Diode	1SR139-400
D 902	Diode	1SR139-400
D 903	Diode	1SR139-400
D 904	Diode	1SR139-400
D 911	Diode	1SR139-400
D 912	Diode	HZS6L(B1)
D 921	Diode	HZS9L(C1)
D 931	Diode	HZS7L(A1)
D 932	Diode	HZS7L(C3)
D 951	Diode	DAN202U
D 981	Diode	DAN202U
D 982	Diode	HZS9L(A2)
ZNR451	Surge Protector	DSP-201M-A21F
L 171	Inductor	CTF1530
L 401	Ferri-Inductor	LAU2R2K
L 402	Ferri-Inductor	LAU4R7K
L 403	Inductor	LAU1R0K
L 601	Ferri-Inductor	LAU2R2K
L 801	Inductor	LAU100K
L 802	Ferri-Inductor	LAU2R2K
L 852	Inductor	CTF1510
L 853	Inductor	CTF1489
L 901	Choke Coil 600µH	CTH1221
L 951	Ferri-Inductor	LAU2R2K
X 601	Radiator 10.00MHz	CSS1475
S 801	Switch(DSENS)	CSN1039
VR 751	Semi-fixed 10kΩ(B)	CCP1229
MIC751	Microphone	CPM1011
	FM/AM Tuner Unit	CWE1563
BZ 641	Buzzer	CPV1050

RESISTORS

Circuit Symbol and No.	Part Name	Part No.
R 101		RS1/16S101J
R 102		RS1/16S470J
R 103		RS1/16S101J
R 104		RS1/16S222J
R 105		RS1/16S103J
R 106		RS1/16S562J
R 107		RS1/16S332J
R 108		RS1/16S150J
R 109		RS1/16S181J
R 110		RS1/16S181J
R 111		RS1/16S223J
R 112		RS1/16S223J
R 113		RS1/16S102J
R 114		RS1/16S102J
R 143		RS1/16S104J
R 144		RS1/16S104J
R 145		RS1/16S563J
R 146		RS1/16S563J
R 147		RS1/16S474J
R 148		RS1/16S474J
R 151		RS1/16S0R0J
R 152		RS1/16S0R0J
R 161		RS1/16S272J
R 162		RS1/16S272J
R 163		RS1/16S162J
R 164		RS1/16S162J
R 241		RS1/16S0R0J
R 242		RS1/16S0R0J
R 245		RS1/16S101J
R 246		RS1/16S101J
R 247		RS1/16S101J
R 248		RS1/16S101J
R 249		RS1/16S101J
R 250		RS1/16S101J
R 254		RS1/16S473J
R 256		RS1/16S473J
R 257		RS1/16S473J
R 258		RS1/16S473J
R 259		RS1/16S473J
R 260		RAB4C102J
R 261		RS1/16S0R0J
R 263		RS1/16S102J
R 285		RS1/16S0R0J
R 286		RS1/16S0R0J
R 287		RS1/16S0R0J
R 288		RS1/16S0R0J
R 289		RS1/16S0R0J
R 290		RS1/16S0R0J
R 301		RS1/16S103J
R 302		RS1/16S103J
R 304		RS1/16S331J
R 351		RS1/16S821J
R 352		RS1/16S821J
R 353		RS1/16S821J
R 354		RS1/16S821J

Circuit Symbol and No.	Part Name	Part No.
R 355		RS1/16S821J
R 356		RS1/16S821J
R 357		RS1/16S223J
R 358		RS1/16S223J
R 359		RS1/16S223J
R 360		RS1/16S223J
R 361		RS1/16S223J
R 362		RS1/16S223J
R 363		RS1/16S0R0J
R 366		RS1/16S0R0J
R 368		RS1/16S0R0J
R 401		RS1/16S473J
R 402		RS1/16S473J
R 403		RS1/16S681J
R 404		RS1/16S681J
R 409		RS1/16S681J
R 410		RS1/16S103J
R 411		RS1/16S681J
R 412		RS1/16S681J
R 413		RS1/16S681J
R 414		RS1/16S473J
R 415		RS1/16S472J
R 416		RS1/16S473J
R 417		RS1/16S473J
R 418		RS1/16S473J
R 419		RS1/16S222J
R 420		RS1/16S222J
R 424		RS1/16S393J
R 602		RS1/16S473J
R 608		RS1/16S104J
R 609		RS1/16S102J
R 610		RS1/16S102J
R 611		RS1/16S102J
R 612		RS1/16S102J
R 613		RS1/16S222J
R 614		RS1/16S222J
R 615		RS1/16S104J
R 616		RS1/16S473J
R 617		RS1/16S0R0J
R 619		RS1/16S473J
R 620		RS1/16S472J
R 621		RS1/16S473J
R 623		RS1/16S473J
R 624		RS1/16S0R0J
R 628		RS1/16S103J
R 630		RS1/16S104J
R 636		RS1/16S221J
R 637		RS1/16S221J
R 638		RS1/16S0R0J
R 641		RS1/16S102J
R 651		RS1/16S222J
R 751		RS1/16S104J
R 752		RS1/16S222J
R 753		RS1/16S561J
R 754		RS1/16S104J
R 801		RS1/16S332J
R 804		RS1/16S1R0J
R 805		RS1/16S221J
R 806		RS1/16S221J
R 807		RS1/16S473J

Circuit Symbol and No.	Part Name	Part No.
R 808		RS1/16S473J
R 809		RS1/16S102J
R 810		RS1/16S222J
R 811		RS1/16S222J
R 812		RS1/16S222J
R 813		RS1/16S222J
R 814		RS1/16S222J
R 815		RS1/16S473J
R 816		RS1/16S104J
R 817		RD1/4PU391J
R 819		RS1/16S222J
R 820		RS1/16S222J
R 851		RS1/16S331J
R 852		RD1/4PU302J
R 853		RD1/4PU302J
R 854		RS1/16S121J
R 855		RS1/16S391J
R 856		RS1/16S1R0J
R 857		RS1/16S331J
R 912		RS1/16S152J
R 913		RS1/16S223J
R 914		RS1/16S152J
R 921		RS1/10S1R0J
R 922		RD1/4PU221J
R 923		RS1/16S103J
R 924		RD1/4PU222J
R 925		RS1/16S122J
R 931		RS1/16S472J
R 932		RS1/16S473J
R 933		RS1/16S103J
R 934		RS1/16S473J
R 935		RS1/16S104J
R 936		RS1/16S103J
R 937		RS1/16S473J
R 938		RD1/4PU102J
R 939		RD1/4PU102J
R 951		RD1/4PU153J
R 952		RS1/16S472J
R 953		RS1/16S472J
R 954		RS1/16S102J
R 962		RS1/16S102J
R 964		RS1/16S822J
R 982		RS1/16S223J
R 983		RS1/16S223J
R 984		RS1/16S473J
R 985		RD1/4PU102J
R 997		RAB4C102J

CAPACITORS

Circuit Symbol and No.	Part Name	Part No.
C 101		CKSRYB104K16
C 102		CKSRYB104K16
C 139		CKSRYB104K16
C 140		CKSRYB104K16
C 141		CKSRYB104K16
C 142		CKSRYB104K16
C 143		CKSRYB474K10
C 144		CKSRYB474K10
C 145		CCSRCH101J50
C 146		CCSRCH101J50

Circuit Symbol and No.	Part Name	Part No.
C 147		CKSRYB103K50
C 161		CKSRYB183K25
C 162		CKSRYB183K25
C 171		CEJQ470M10
C 172		CKSRYB104K16
C 173		CEJQ100M16
C 177		CCSRCH100D50
C 178		CCSRCH100D50
C 179		CCSRCH100D50
C 180		CCSRCH100D50
C 191		CEJQ1R0M50
C 192		CEJQ1R0M50
C 205		CEJQR22M50
C 206		CEJQR22M50
C 207		CEJQ1R0M50
C 208		CEJQ1R0M50
C 209		CEJQ1R0M50
C 210		CEJQ1R0M50
C 211		CEJQNP4R7M16
C 212		CEJQNP4R7M16
C 213		CEJQNP4R7M16
C 214		CEJQNP4R7M16
C 215		CEJQNP4R7M16
C 216		CEJQNP4R7M16
C 217		CEJQNP4R7M16
C 218		CEJQNP4R7M16
C 251		CEJQ100M16
C 252		CEJQ220M10
C 306		CEHAR330M10
C 307	4700µF/16V	CCH1367
C 309		CKSRYB104K16
C 310		CEHAR100M16
C 311		CKSQYB225K10
C 313		CKSRYB474K10
C 314		CKSRYB474K10
C 315		CKSRYB474K10
C 316		CKSRYB474K10
C 321		CKSRYB474K10
C 322		CKSRYB474K10
C 323		CKSRYB474K10
C 324		CKSRYB474K10
C 325		CKSQYB225K10
C 351		CEJQ100M16
C 352		CEJQ100M16
C 353		CEJQ100M16
C 354		CEJQ100M16
C 355		CEJQ100M16
C 356		CEJQ100M16
C 403		CKSRYB473K25
C 404		CEJQ101M6R3
C 405		CKSRYB103K50
C 406		CEJQ220M10
C 408		CKSRYB223K50
C 409		CKSRYB223K50
C 411		CKSRYB472K50
C 440		CKSRYB103K50
C 601		CEJQ4R7M35
C 602		CKSRYB102K50
C 604		CCSRCH180J50
C 605		CCSRCH220J50

Circuit Symbol and No.	Part Name	Part No.
C 751		CEJQ100M16
C 752		CEJQ100M16
C 753		CEJQ220M10
C 754		CKSRYB474K10
C 756		CKSRYB474K10
C 801		CKSRYB103K50
C 802		CEJQ470M10
C 803		CKSRYB104K16
C 805		CKSRYB103K25
C 806		CKSRYB473K25
C 812		CKSYB105K25
C 851		CEJQ470M16
C 853	4.7µF	CCG1111
C 855		CEJQ100M25
C 856		CCSRCH331J50
C 857		CEJQ330M25
C 858		CKSRYB104K16
C 859		CEJQ101M10
C 860		CKSRYB104K16
C 861		CKSRYB103K50
C 911	470µF/16V	CCH1183
C 912		CKSRYB472K50
C 913		CKSRYB103K50
C 914		CEJQ470M10
C 921	330µF/10V	CCH1181
C 922		CKSRYB103K50
C 923		CEJQ101M16
C 931		CEJQ100M16
C 932		CKSRYB104K16
C 963		CEJQ2R2M50

C

Unit Number:CWM7988(KEH-P7020R/XN/EW)

Unit Name:Keyboard Unit

MISCELLANEOUS

IC1901	IC PD5706A	
IC1902	IC PD8088A	
IC1903	IC TSOP1840SB3V	
IC1904	IC S-818A33AUC-BGN	
Q 1941	Transistor	2SD1664
Q 1942	Transistor	2SC4617
Q 1961	Transistor	2SB710A
Q 1962	Transistor	DTC114EU
Q 1963	Transistor	2SB710A
Q 1964	Transistor	DTC114EU
Q 1965	Transistor	DTC114EU
D 1901	Diode	DAP202U
D 1902	Diode	DAN202U
D 1906	Diode	1SS355
D 1969	LED	CL170DCD
D 1970	LED	CL170DCD
D 1979	LED	CL170PGCD
D 1980	LED	CL170PGCD
D 1981	LED	CL170PGCD
D 1983	LED	CL170UBX

Circuit Symbol and No.	Part Name	Part No.
D 1984	LED	CL170UBX
D 1993	LED	CL170PGCD
D 1996	LED	CL170PGCD
L 1901	Inductor	CTF1530
L 1902	Inductor	CTF1530
L 1922	Inductor-Array	CTF1421
L 1923	Inductor-Array	CTF1421
L 1924	Inductor-Array	CTF1421
L 1990	Inductor-Array	CTF1421
TH 1941	Thermistor	CCX1037
X 1901	Radiator 10.0MHz	CSS1577
S 1901	Push Switch	CSG1115
S 1903	Push Switch	CSG1111
S 1906	Push Switch	CSG1115
S 1907	Push Switch	CSG1115
S 1908	Push Switch	CSG1111
S 1909	Push Switch	CSG1115
S 1910	Push Switch	CSG1115
S 1911	Push Switch	CSG1115
S 1912	Push Switch	CSG1115
S 1913	Push Switch	CSG1115
S 1914	Push Switch	CSG1115
S 1915	Push Switch	CSG1115
S 1916	Push Switch	CSG1115
S 1917	Push Switch	CSG1115
S 1918	Push Switch	CSG1115
S 1919	Push Switch	CSG1115
S 1920	Push Switch	CSG1115
S 1922	Push Switch	CSG1115
S 1923	Push Switch	CSG1115
S 1924	Push Switch	CSG1115
S 1930	Encoder(VOLUME)	CSD1059
VR 1941	Semi-fixed 20kΩ(B)	CCP1231
	OEL Unit	MXS8017

RESISTORS

R 1901	RS1/16S222J
R 1902	RS1/16S222J
R 1903	RS1/16S473J
R 1904	RS1/16S103J
R 1905	RS1/16S682J
R 1906	RS1/16S121J
R 1907	RS1/16S2R2J
R 1908	RS1/16S222J
R 1909	RS1/16S154J
R 1910	RS1/16S473J
R 1911	RAB4C101J
R 1912	RS1/16S473J
R 1913	RS1/16S473J
R 1914	RS1/16S103J
R 1915	RAB4C101J
R 1916	RS1/16S101J
R 1917	RAB4C101J
R 1918	RAB4C101J
R 1919	RAB4C101J
R 1920	RAB4C101J

Circuit Symbol and No.	Part Name	Part No.
R 1925		RAB4C101J
R 1926		RS1/16S101J
R 1931		RS1/16S0R0J
R 1941		RS1/16S333J
R 1942		RS1/16S683J
R 1943		RS1/16S392J
R 1944		RS1/16S393J
R 1945		RAB4C102J
R 1946		RS1/16S222J
R 1947		RS1/16S103J
R 1949		RS1/16S102J
R 1950		RS1/16S102J
R 1961		RS1/16S473J
R 1962		RS1/16S272J
R 1963		RS1/16S473J
R 1964		RS1/16S272J
R 1965		RS1/16S472J
R 1966		RS1/16S101J
R 1967		RS1/16S101J
R 1968		RS1/16S101J
R 1969		RS1/16S101J
R 1970		RS1/16S270J
R 1971		RS1/16S270J
R 1972		RS1/16S270J
R 1973		RS1/16S270J
R 1974		RS1/16S270J
R 1975		RS1/16S270J
R 1976		RS1/16S101J
R 1977		RS1/16S101J
R 1978		RS1/16S121J
R 1979		RS1/16S121J
R 1986		RS1/16S181J
R 1987		RS1/16S181J
R 1991		RS1/16S181J
R 1992		RS1/16S181J

CAPACITORS

C 1901	CKSYB105K25
C 1902	CKSRYB104K16
C 1903	CKSRYB474K10
C 1905	CKSRYB103K25
C 1909	CKSRYB473K16
C 1910	CSZSR4R7M10
C 1911	CKSRYB103K25
C 1912	CSZSR4R7M10
C 1913	CKSRYB103K50
C 1914	CSZSR4R7M10
C 1941	CKSRYB104K25
C 1942	CKSRYB104K16
C 1943	CKSRYB104K25
C 1944	CKSRYB104K25
C 1945	CKSRYB104K25
C 1946	CKSRYB104K16
C 1947	CKSRYB104K25
C 1961	CKSRYB104K25
C 1962	CKSRYB104K25
C 1972	CKSRYB103K25

C

Unit Number:CWM8237(KEH-P7025/XN/ES)

Unit Name:Keyboard Unit

MISCELLANEOUS

Circuit Symbol and No.	Part Name	Part No.
IC 1901	IC	PD5706A
IC 1902	IC	PD8088A
IC 1903	IC	TSOP1840SB3V
IC 1904	IC	S-818A33AUC-BGN
Q 1941	Transistor	2SD1664
Q 1942	Transistor	2SC4617
D 1901	Diode	DAP202U
D 1902	Diode	DAN202U
D 1906	Diode	1SS355
D 1979	LED	CL170PGCD
D 1980	LED	CL170PGCD
D 1981	LED	CL170PGCD
D 1983	LED	CL170UBX
D 1984	LED	CL170UBX
D 1993	LED	CL170PGCD
D 1996	LED	CL170PGCD
L 1901	Inductor	CTF1530
L 1902	Inductor	CTF1530
L 1922	Inductor-Array	CTF1421
L 1923	Inductor-Array	CTF1421
L 1924	Inductor-Array	CTF1421
L 1990	Inductor-Array	CTF1421
TH 1941	Thermistor	CCX1037
X 1901	Radiator 10.0MHz	CSS1577
S 1901	Switch	CSG1107
S 1903	Push Switch	CSG1111
S 1906	Switch	CSG1107
S 1907	Switch	CSG1107
S 1908	Push Switch	CSG1111
S 1909	Switch	CSG1107
S 1910	Switch	CSG1107
S 1911	Switch	CSG1107
S 1912	Switch	CSG1107
S 1913	Switch	CSG1107
S 1914	Switch	CSG1107
S 1915	Switch	CSG1107
S 1916	Switch	CSG1107
S 1917	Switch	CSG1107
S 1918	Switch	CSG1107
S 1919	Switch	CSG1107
S 1920	Switch	CSG1107
S 1922	Switch	CSG1107
S 1923	Switch	CSG1107
S 1924	Switch	CSG1107
S 1930	Encoder(VOLUME)	CSD1059
VR 1941	Semi-fixed 20kΩ(B)	CCP1231
	OEL Unit	MXS8017

RESISTORS

Circuit Symbol and No.	Part Name	Part No.
R 1901		RS1/16S222J
R 1902		RS1/16S222J
R 1903		RS1/16S473J
R 1904		RS1/16S103J
R 1905		RS1/16S682J
R 1906		RS1/16S121J
R 1907		RS1/16S2R2J
R 1908		RS1/16S222J
R 1909		RS1/16S154J
R 1910		RS1/16S473J
R 1911		RAB4C101J
R 1912		RS1/16S473J
R 1913		RS1/16S473J
R 1914		RS1/16S103J
R 1915		RAB4C101J
R 1916		RS1/16S101J
R 1917		RAB4C101J
R 1918		RAB4C101J
R 1919		RAB4C101J
R 1920		RAB4C101J
R 1925		RAB4C101J
R 1926		RS1/16S101J
R 1931		RS1/16S0R0J
R 1941		RS1/16S333J
R 1942		RS1/16S683J
R 1943		RS1/16S392J
R 1944		RS1/16S393J
R 1945		RAB4C102J
R 1946		RS1/16S222J
R 1947		RS1/16S103J
R 1949		RS1/16S102J
R 1950		RS1/16S102J
R 1966		RS1/16S101J
R 1967		RS1/16S101J
R 1968		RS1/16S101J
R 1969		RS1/16S101J
R 1970		RS1/16S270J
R 1971		RS1/16S270J
R 1972		RS1/16S270J
R 1973		RS1/16S270J
R 1974		RS1/16S270J
R 1975		RS1/16S270J
R 1976		RS1/16S101J
R 1977		RS1/16S101J
R 1978		RS1/16S121J
R 1979		RS1/16S121J
R 1980		RS1/16S0R0J
R 1985		RS1/16S0R0J
R 1986		RS1/16S181J
R 1987		RS1/16S181J

CAPACITORS

Circuit Symbol and No.	Part Name	Part No.
C 1901		CKSYB105K25
C 1902		CKSRYB104K16
C 1903		CKSRYB474K10
C 1905		CKSRYB103K25
C 1909		CKSRYB473K16

Circuit Symbol and No.	Part Name	Part No.
C 1910		CSZSR4R7M10
C 1911		CKSRYB103K25
C 1912		CSZSR4R7M10
C 1913		CKSRYB103K50
C 1914		CSZSR4R7M10
C 1941		CKSRYB104K25
C 1942		CKSRYB104K16
C 1943		CKSRYB104K25
C 1944		CKSRYB104K25
C 1945		CKSRYB104K25
C 1946		CKSRYB104K16
C 1947		CKSRYB104K25
C 1961		CKSRYB104K25
C 1962		CKSRYB104K25
C 1972		CKSRYB103K25

B

Unit Number:CWM7987

Unit Name:Panel Unit

S 1850		Push Switch(EJECT)	CSG1112
R 1851			RS1/16S101J
R 1852			RS1/16S101J
R 1853			RS1/16S101J
C 1863			CKSRYB223K50

D

Unit Number:EWM1033

Unit Name:Deck Unit

MISCELLANEOUS

IC 251		IC	HA12228F
IC 351		IC	PA2020A
D 352		Diode	1SS355
VR 301		Semi-fixed 33kΩ(B)	CCP1280
VR 302		Semi-fixed 33kΩ(B)	CCP1280

RESISTORS

R 271	RS1/16S183J
R 285	RS1/16S0R0J
R 351	RS1/16S102J
R 352	RS1/16S102J
R 353	RS1/16S102J
R 354	RS1/16S102J
R 355	RS1/16S274J
R 362	RS1/8S301J
R 373	RS1/16S0R0J
R 374	RS1/8S0R0J
R 375	RS1/8S0R0J
R 401	RS1/16S153J
R 402	RS1/16S332J
R 403	RS1/16S911J
R 404	RS1/16S274J

Circuit Symbol and No.	Part Name	Part No.

CAPACITORS

C 251		CKSRYB391K50
C 252		CKSRYB391K50
C 253		CKSRYB391K50
C 254		CKSRYB391K50
C 255		CKSRYB103K50
C 256		CKSRYB103K50
C 271	1µF/50V	ECH0002
C 272		CKSRYB104K16
C 301		CKSRYB104K16
C 302		CKSRYB104K16
C 309		CKSRYB104K16
C 310		CKSRYB104K16
C 351		CKSQYB224K25
C 352		CKSRYB392K50
C 353		CKSRYB103K50
C 354		CKSRYB103K50
C 355		CKSQYB104K50
C 356		CKSRYB103K50
C 401		CKSRYB392K50
C 402		CKSRYB334K10
C 403		CKSRYB223K25
C 404		CKSRYB103K50
C 405		CKSRYB333K16

E

Unit Number:

Unit Name:Reel Sense PCB

MISCELLANEOUS

S 1	Switch(LOAD)	ESG1007
S 2	Switch(MODE)	ESG1007
S 3	Switch(70µs)	ESG1007
EGN1	Photo-reflector	EGN1004

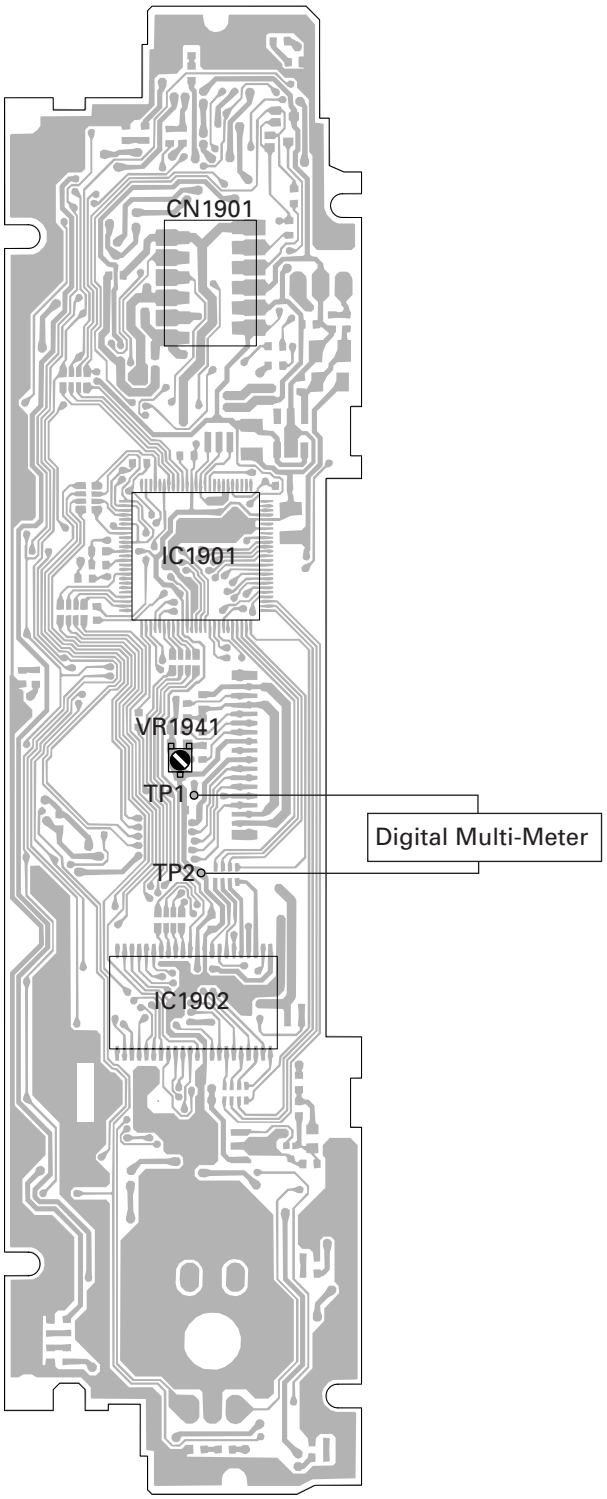
Miscellaneous Parts List

M 1	Motor Unit(MAIN)	EXA1490
M 2	Motor Unit(SUB)	EXA1580
HD 1	Head Assy	EXA1589

6. ADJUSTMENT
6.1 OEL UNIT ADJUSTMENT

● **Adjustment point**

KEYBOARD UNIT (SIDE B)

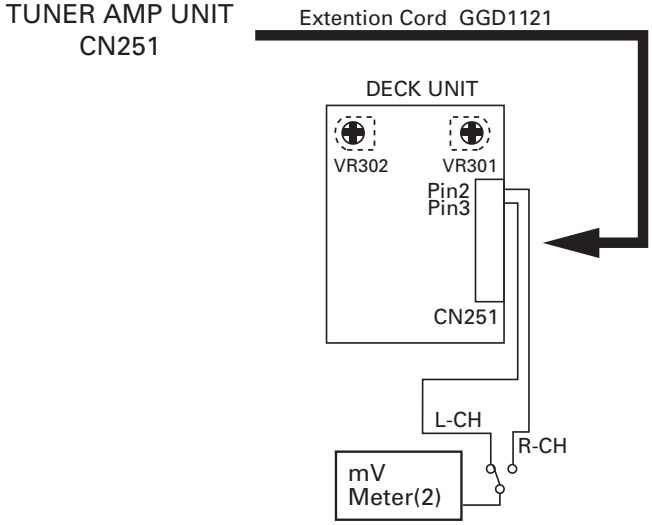


<When the OEL Unit has been replaced>

1. Use VR1941 to adjust the resistance between TP1 and TP2 to 6.60kΩ.

6.2 DOLBY B NR ADJUSTMENT

● **Connection Diagram**



DOLBY B NR ADJUSTMENT

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : –8.24dBm±1dB (DOLBY NR Switch : OFF)

7. GENERAL INFORMATION
7.1 DIAGNOSIS
7.1.1 DISASSEMBLY

● **Removing the Case (not shown)**

1. Remove the Case.

● **Removing the Grille Panel Assy (Fig.1)**

1 Remove the two screws and then remove the Grille Panel Assy.

● **Removing the Cassette Mechanism Module (Fig.1)**

2 Remove the four screws and then remove the Cassette Mechanism Module.

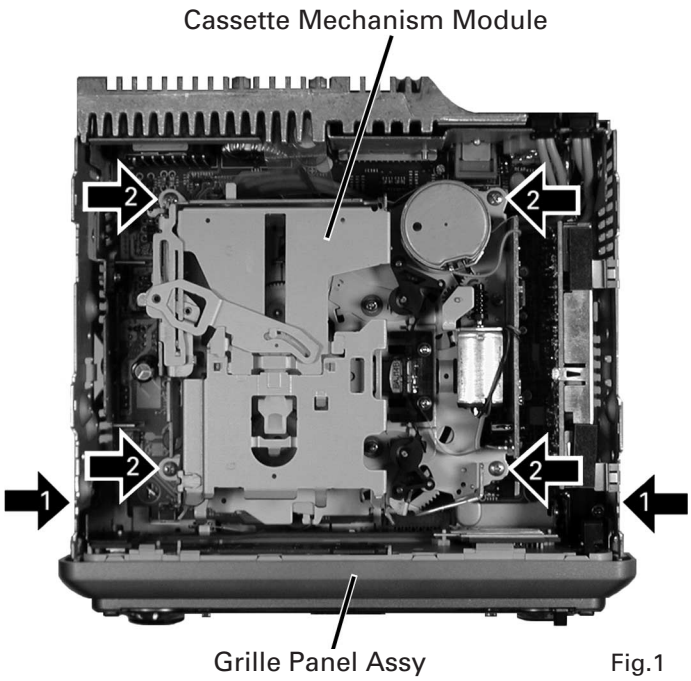


Fig.1

● **Removing the Tuner Amp Unit (Fig.2)**

1 Remove the two screws.

2 Remove the three screws.

3 Straight the tabs at three locations indicated.

4 Remove the screw and then remove the Tuner Amp Unit.

*) Tuner Amp Unit is different partially from this photo.

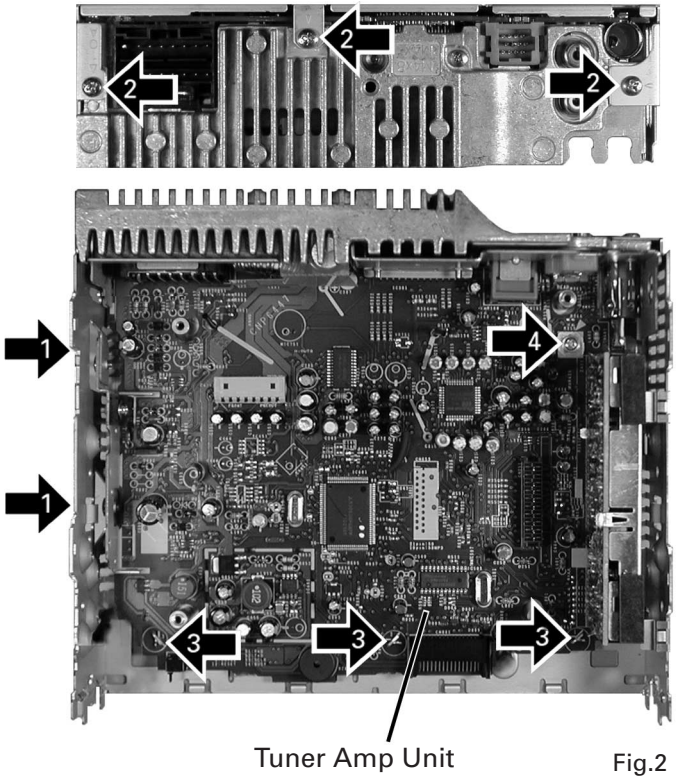


Fig.2

● Removing the OEL Unit

1. Apply hot air to the cable pins for the anode terminal using a blower used for removing a flat-packaged IC or something like that. When all the pins are peeling off from the PCB, pinch the cable with a pair of tweezers and remove it slowly from the PCB. (Fig.3)

* Be careful not to remove other electrical parts when you use a blower. Especially, when hot air is appropriated to the VR1902 too much, the volume will destroy.

* Flexible cable may not remove easily by transforming the Bosses by the hot air of the Blower.

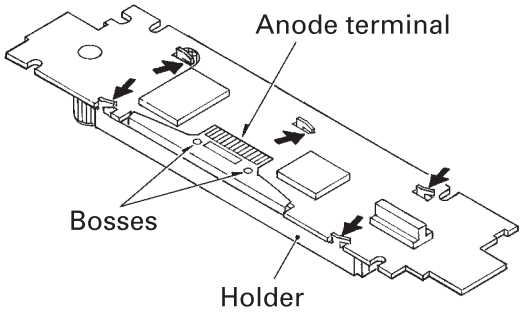


Fig.3

2. Five tabs are extended until becoming straight in the direction of the arrow and then remove the Holder. (Fig.3)
3. Slowly set up the OEL Unit. At this time, the stress is prevented from hanging to flexible cable in the Cathode terminal. (Fig.4)
4. The Cathode terminal is removed according to the procedure same as the Anode terminal, and the OEL Unit is removed. (Fig.4)
5. Remove the Holder. (Remove after removing the Cathode terminal without fail.) (Fig.4)

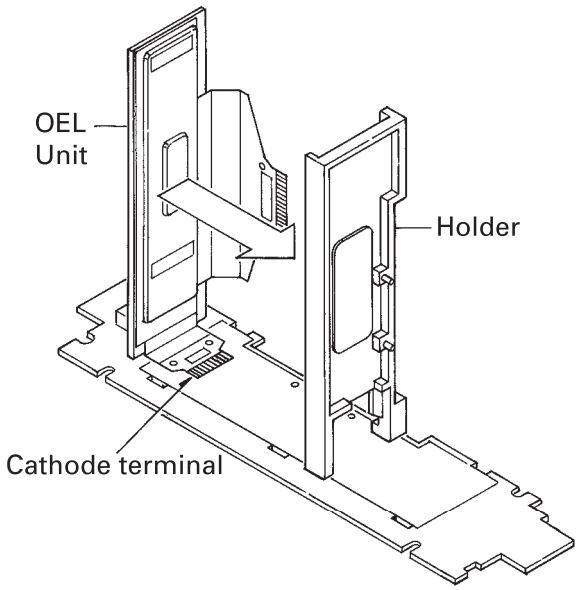


Fig.4

● Installing the OEL Unit

1. Install the Holder in the OEL Unit. (Fig.5)
2. When soldering the flexible cable for the Cathode terminal on the PCB, use a pair of tweezers. First, insert the tips of tweezers into 2 holes in the flexible cable, then into the 2 holes in the PCB. (Fig.5)
3. Position the flexible cable on the PCB so that their lands touch each other. (Fig.5)
4. Apply solder to each pin of the flexible cable. (Fig.5)

* Appropriate soldering iron lightly so that the stress should not hang to Flexible cable.

5. Lay down the OEL Unit. (Fig.5)
6. Install the Holder. (Fig.3)
7. When soldering the flexible cable for the Anode terminal on the PCB, first, insert the Bosses on the PCB into the 2 holes in the flexible cable. Then, take the same procedures 2 and 3 as that for the Cathode terminal to solder the cable pins. (Fig.3)

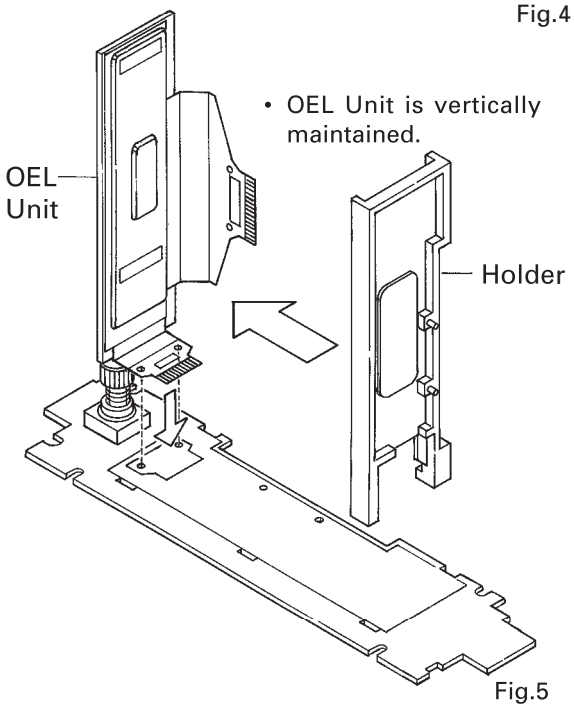
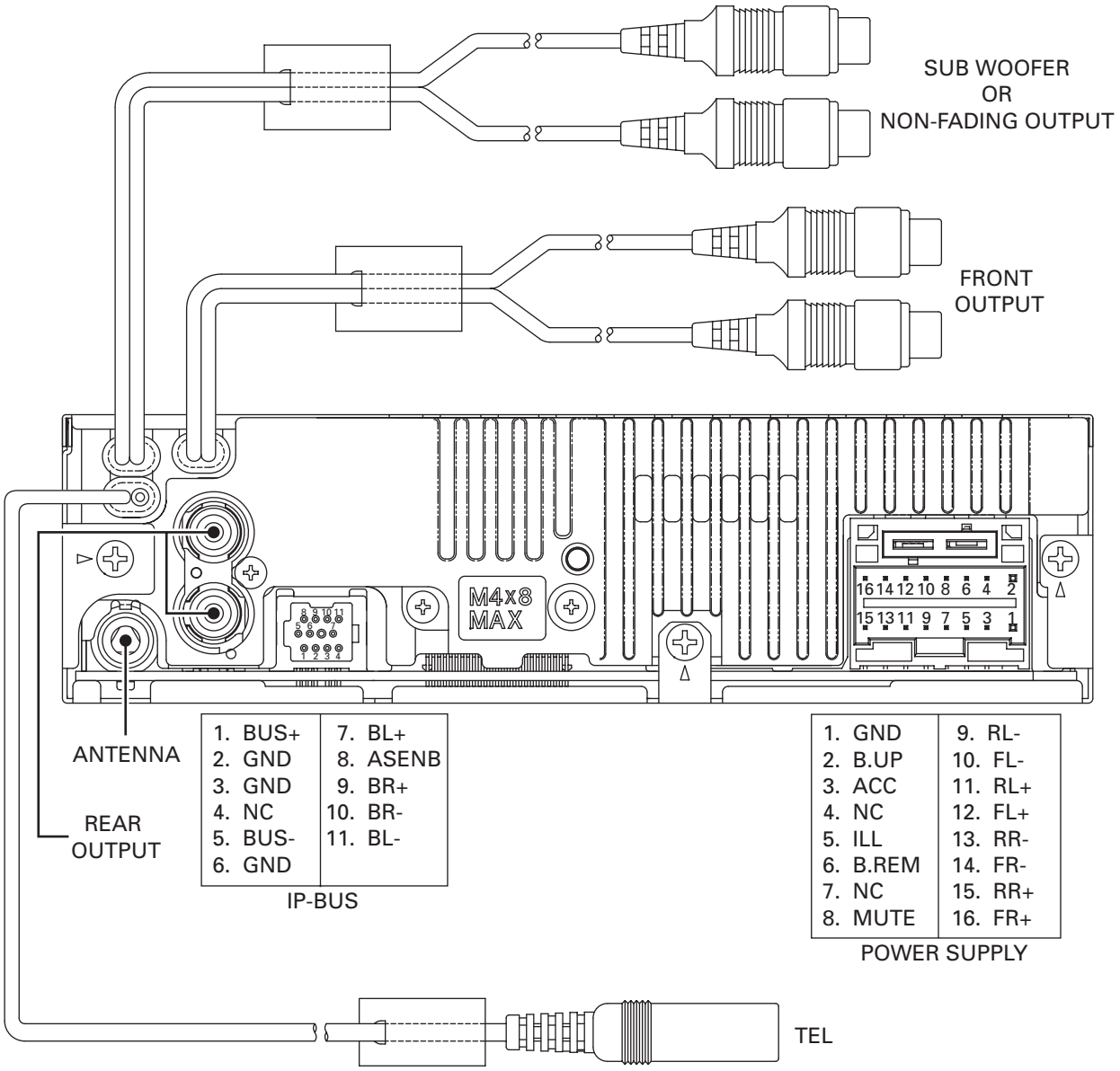


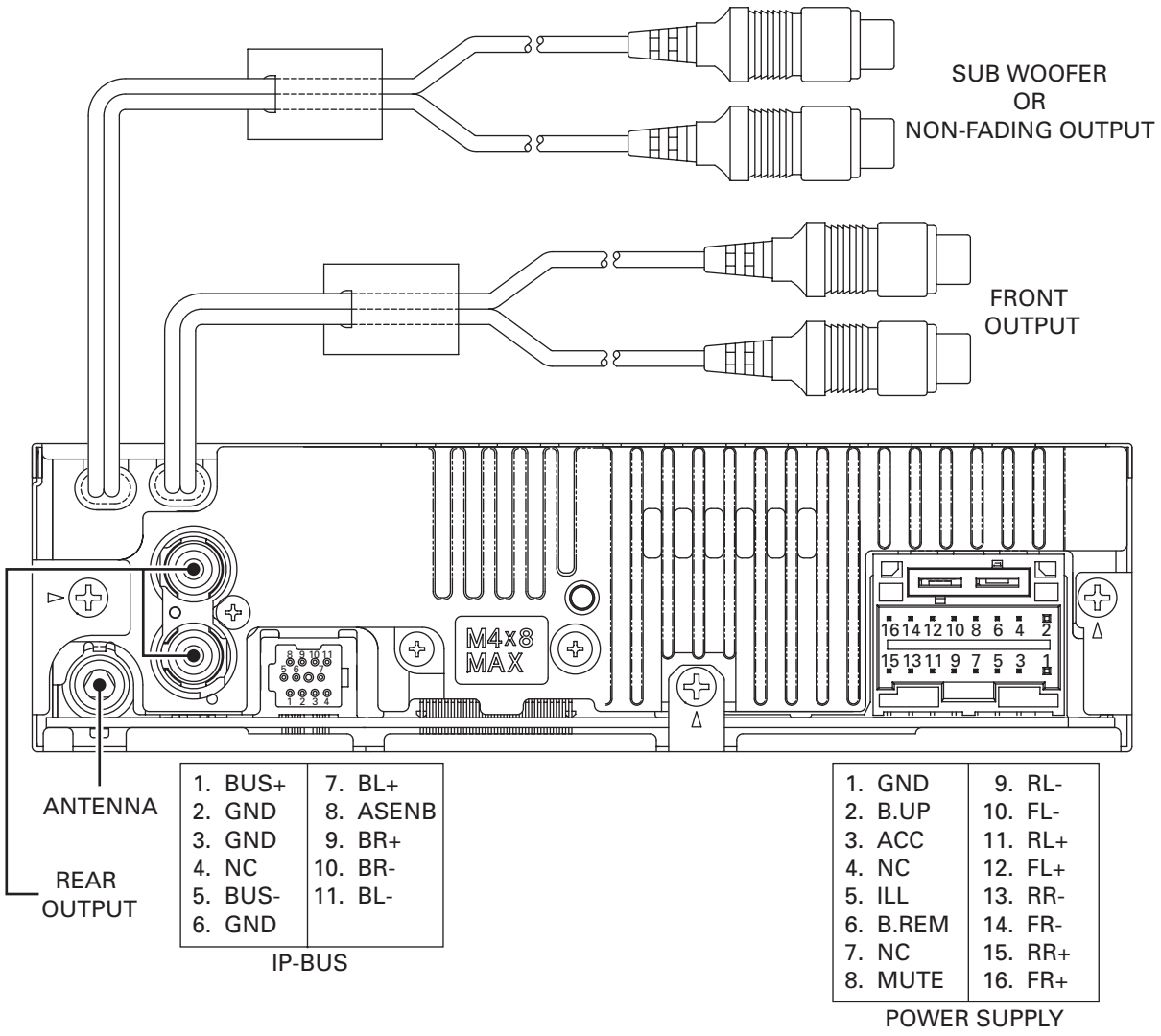
Fig.5

7.1.2 CONNECTOR FUNCTION DESCRIPTION

● **KEH-P7020R/XN/EW**



● **KEH-P7025/XN/ES**



1. BUS+	7. BL+
2. GND	8. ASENB
3. GND	9. BR+
4. NC	10. BR-
5. BUS-	11. BL-
6. GND	

IP-BUS

1. GND	9. RL-
2. B.UP	10. FL-
3. ACC	11. RL+
4. NC	12. FL+
5. ILL	13. RR-
6. B.REM	14. FR-
7. NC	15. RR+
8. MUTE	16. FR+

POWER SUPPLY

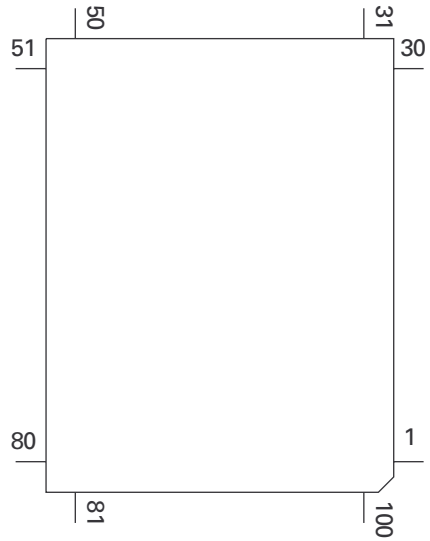
7.2 IC

● **Pin Functions (PD5698B)**

Pin No.	Pin Name	I/O	Function and Operation
1	TUNPDO	O	TUNER:Data output(PLL)
2	TUNPCK	O	TUNER:Clock output(PLL)
3	EMUTE	O	EVOL:Mute output (Not used)
4	VST	O	EVOL:Strobe output
5	VDT	O	EVOL:Data output
6	NC		Not used
7	VCK	O	EVOL:Clock output
8	BYTE		Vss
9	CNVSS		Vss
10	TELIN	I	TEL:Telephone mute input
11	HTELPW	O	TEL:Microphone control output
12	RESET	I	Reset input(RESET)
13	XOUT		Clock output
14	VSS		Power supply input(Vss)
15	XIN		Clock input
16	VCC		Power supply input(Vcc)
17	NC		Not used(Vcc)(Pull up)
18	RCK	I	RDS:Clock input
19	LDET	I	RDS:PLL lock detection input
20	DALMON	O	DFS alarm output
21	RX2	I	IPBUS:Input 2
22	OELPW	O	OEL power supply output
23	SYSPW	O	System power control output
24	PEE	O	Beep tone output
25	RDS57K	I	RDS:57KHz pulse count input
26	ROMCS	O	External ROM:Chip select output
27	ROMCK	O	External ROM:Clock output
28	ROMDATA	I/O	External ROM:Data input / output
29	RX	I	IPBUS:Data input
30	TX	O	IPBUS:Data output
31	NC		Not used
32	NR	O	CASSETTE:Dolby N/R select output
33	RIMUTE	O	CASSETTE:Radio interrupt mute output
34	NC		Not used
35	DPDT	O	GRILLE:Display data output
36	KYDT	I	GRILLE:Key data input
37, 38	ROT1, 0	I	Rotary encoder pulse input 1, 0
39	PCL	O	Clock adjustment output
40	SWVDD	O	GRILLE:Chip enable output
41	DSENS	I	Detach sense input
42	FLPILM	O	Inside of flap illumination output
43	ILMPW	O	Illumination output
44	EJTIN	I	EJECT key input
45	DRST	O	RDS:Reset output
46	RDSLK	I	RDS:Lock signal input
47	RDT	I	RDS:Data input
48	AM/FM	O	TUNER:Decoder power supply control output
49	ST	I	TUNER:Stereo input
50	SD	I	TUNER:SD input
51	NL2DT	I	RDS:Noise level 2 input
52	TMUTE	O	RDS:Mute output
53	SDBW	I	RDS:In case of NF, SD input
54	MSIN	I	CASSETTE:MS sense input
55	DIRO	O	CASSETTE:Tape derection forward / reverse select output
56	PLAY	O	CASSETTE:MS gain select output
57	MTLSW	I	CASSETTE:Tape equalizer 70μs switch sense input
58	LOADSW	I	CASSETTE:Loading switch sense input

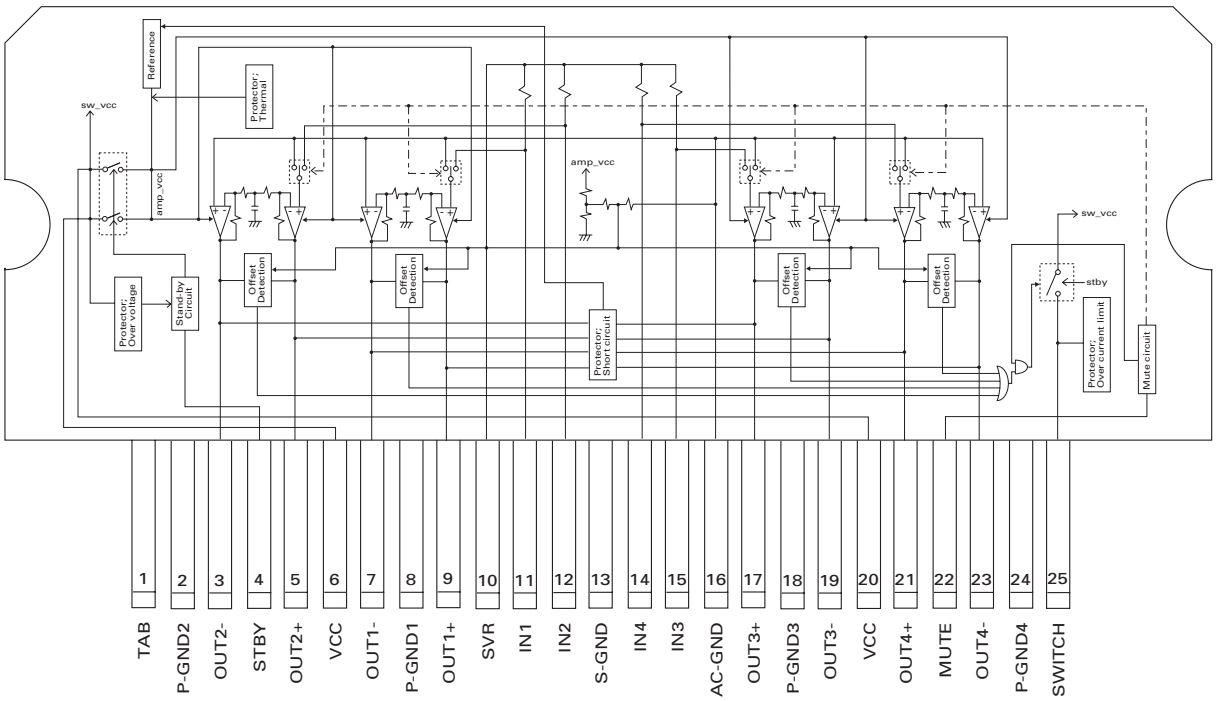
Pin No.	Pin Name	I/O	Function and Operation
59	POS	I	CASSETTE:Position sense input
60	NC		Not used
61	ES	I	CASSETTE:Tape end sense input
62	VCC		Power supply input(Vcc)
63	SC2	O	CASSETTE:Sub motor 2 control output
64	VSS		Power supply input(Vss)
65	SC1	O	CASSETTE:Sub motor 1 control output
66	CM	O	CASSETTE:Capstan motor control output
67	NC		Not used
68	STBY	O	CASSETTE:Motor driver IC control output
69	NC		Not used
70	HTELM	O	TEL:Mute output for handsfree (Not used)
71	TUNPCE2	O	TUNER:Chip enable output(EEPROM)
72	TUNPCE	O	TUNER:Chip enable output(PLL)
73	BSENS	I	Backup sense
74	ASENS	I	ACC sense
75	CURRQ	O	RDS:Voltage FIX output
76	LOCH	O	TUNER:Local H output
77	LOCL	O	TUNER:Local L output
78-80	NC		Not used
81	IPPW	O	IPBUS:Driver power supply control output
82	ASENBO	O	IPBUS:Slave ACC sense output
83	ISENS	I	Illumination sense input
84, 85	MODEL1, 0	I	Model input 1, 0
86	RECIVE	O	During RDS data reception output
87	MUTE	O	Mute output
88	TESTIN	I	Test program input
89,90	NC		Not used
91	ASLIN	I	ASL input
92	LVLINR	I	Level indicator R ch input
93	CSENS	I	Flap open/close sense input
94	LVLINL	I	Level indicator L ch input
95	NL1	I	RDS:Noise level input 1
96	AVSS		AD converter power supply input(Vss)
97	SL	I	TUNER:Signal level input
98	VREF		AD converter reference voltage(Vref)
99	AVCC		AD converter power supply input(Vcc)
100	TUNPDI	I	TUNER:Data input

*PD5698B

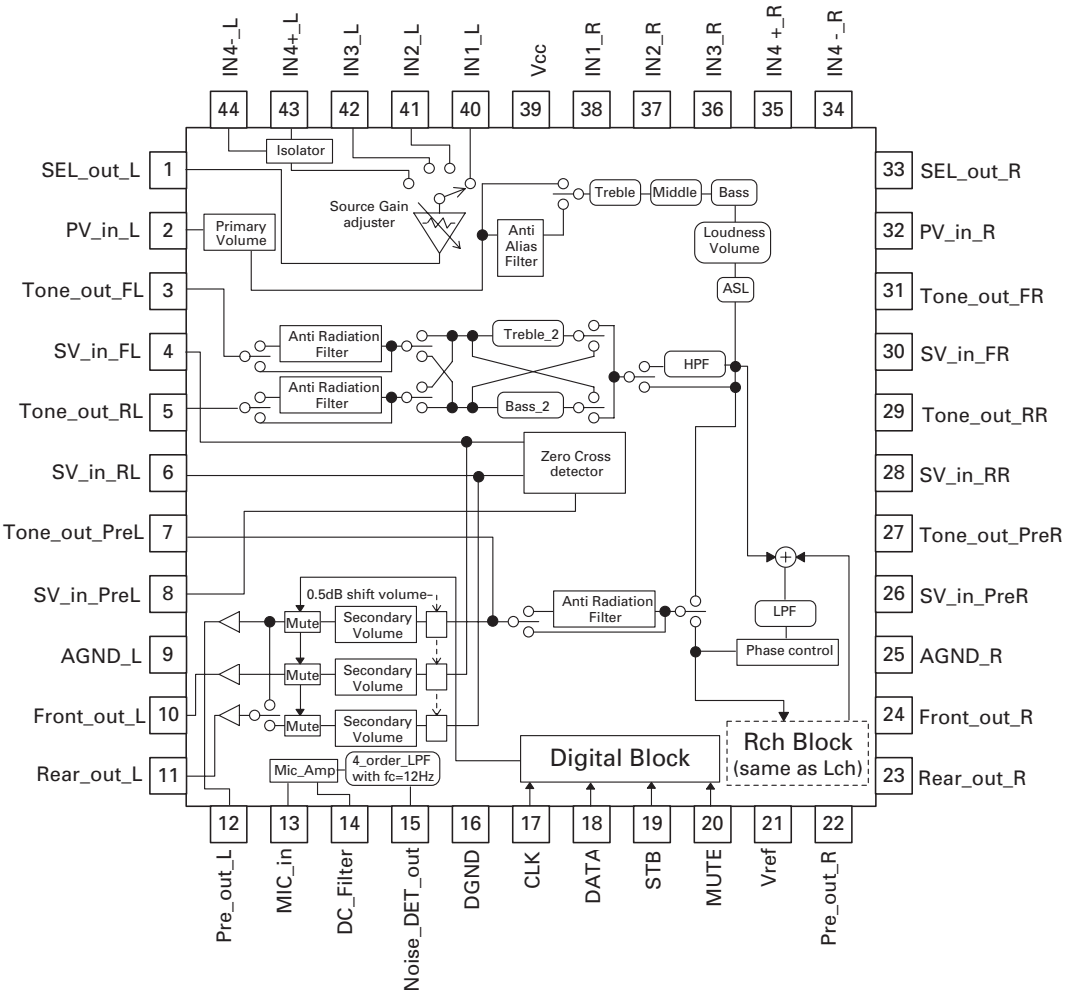


IC's marked by * are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

PAL007A



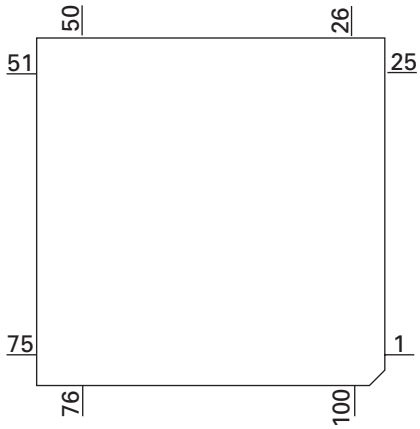
PML009A



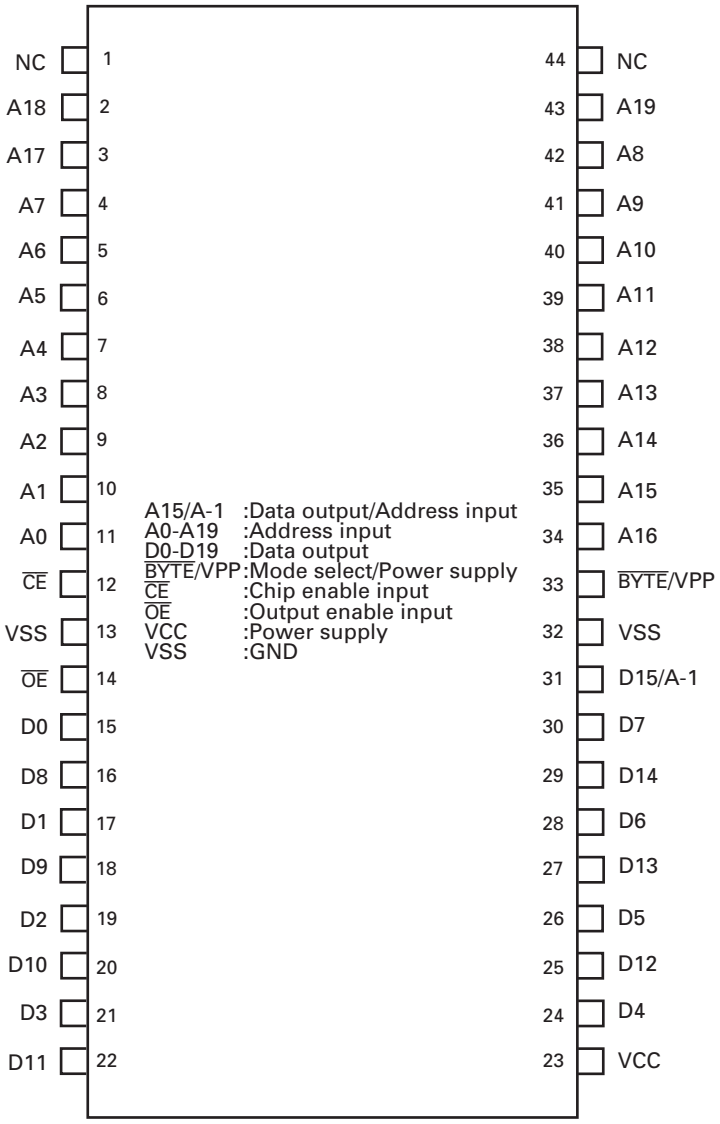
● Pin Functions (PD5706A)

Pin No.	Pin Name	I/O	Function and Operation
1-4	NC		Not used OPEN
5	REM	I	Remote control reception input
6	BYTE	I	GND connection
7	CNVSS	I	GND connection
8, 9	NC		Not used OPEN
10	$\overline{\text{RESET}}$		Pull up
11	XOUT	O	Crystal oscillating element connection pin
12	VSS		VSS connection
13	XIN	I	Crystal oscillating element connection pin
14	VCC		VCC connection
15	$\overline{\text{NMI}}$	I	NVI input (Not used)
16-19	$\overline{\text{KD1}}$-$\overline{\text{KD2}}$	I	Key data 1-4 input
20	CKC	O	Fixed pulse output for cathode driver
21	NC		Not used
22	CKA	O	Fixed pulse output for anode driver
23	NC		Not used
24	LS	O	Line sink signal output
25	NC		Not used
26	CKD	O	Data transport / driver clock output
27	DPDT	I	Display data input
28	KYDT	O	Key data output
29	DA2	O	Display data MSB output
30	NC		Not used
31	CLK1	I	Clock input for UART1
32	ILMD	O	Dual illumination select output
33	DA1	O	Display data LSB output
34	NC		Not used
35	CLK0	I	Clock input for UART0 input
36	NC		Not used
37	$\overline{\text{RDY}}$	I	Not used
38	NC		Not used
39	$\overline{\text{HOLD}}$	I	Not used
40,41	NC		Not used
42	$\overline{\text{RD}}$	O	Read strobe output
43-46	NC		Not used
47	$\overline{\text{CS1}}$	O	Bank address select output
48	$\overline{\text{CS0}}$	O	External ROM chip select output
49	A19	O	Address bus 19 output
50	A18	O	Address bus 18 output (Not used)
51-59	A17-A9	O	Address bus 17-9 output
60	VCC		VCC connection
61	A8	O	Address bus 8 output
62	VSS		GND connection
63-69	A7-A1	O	Address bus 7-1 output
70	A0	O	Address bus 0 output (Not used)
71-86	D15-D0	I/O	Data bus 15-0 input / output
87-92	$\overline{\text{KS1}}$-$\overline{\text{KS6}}$	I/O	Key strobe input / output
93	NC		Not used
94	AVSS		GND connection
95	NC		Not used OPEN
96	VREF		Not used VSS connection
97	AVCC		Not used VCC connection
98-100	NC		Not used OPEN

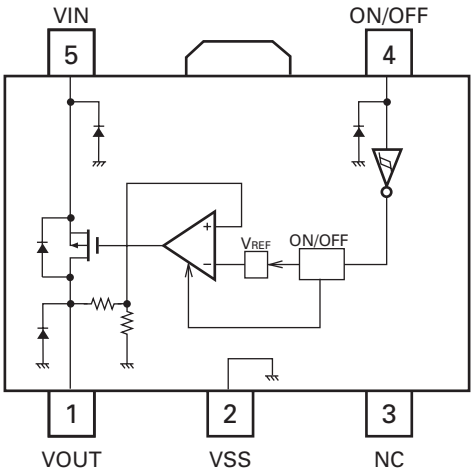
*PD5706A



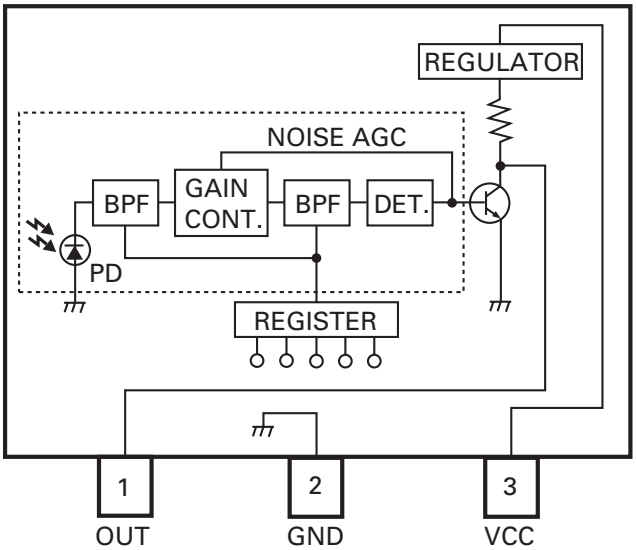
*PD8088A



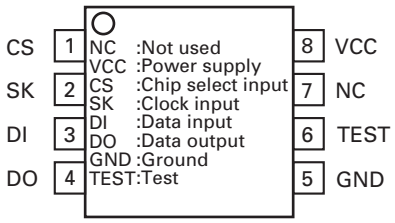
*S-818A33AUC-BGN



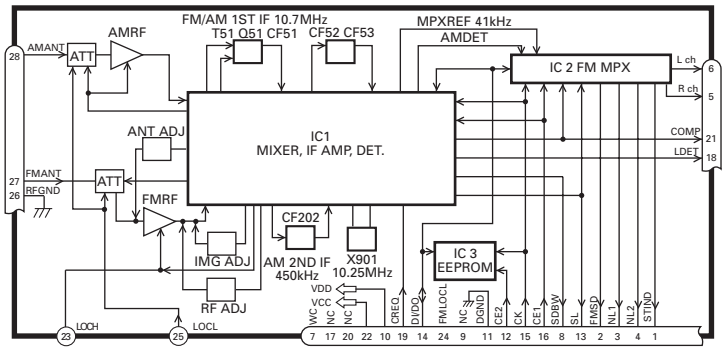
*TSOP1840SB3V



*PDH0046A

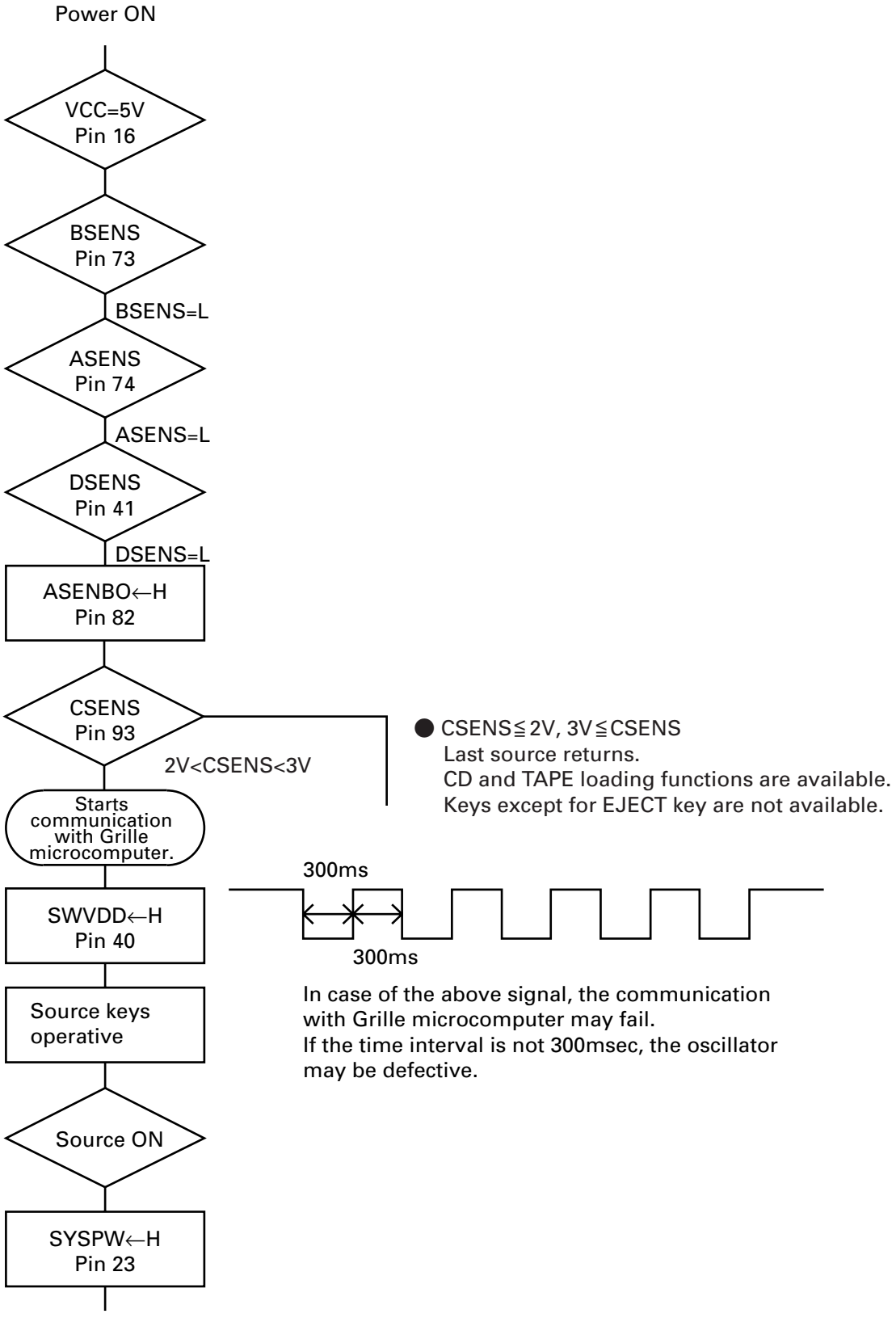


● FM/AM Tuner Unit



No.	Symbol	I/O	Explain	
1	STIND	O	stereo indicator	"Low" when the FM stereo signals are received. To be pulled up to the "VDD" at 47kΩ.
2	FMSD	O	FM station detector	"High" when signals are received. To be pulled up to the "VDD" at 47kΩ Meanwhile, 10kΩ should be used when taking diver FIX trigger from here and "High: 0.9VDD or more" and "Low: 250mV or less". (Should satisfy the diver IC specifications)
3	NL1	O	noise level-1	"High" when noise is received. Output for the RDS. GND at 47kΩ //1,800pF.
4	NL2	O	noise level-2	"High" when noise is received. Output for the RDS. GND at 36kΩ //330pF.
5	Rch	O	R channel output	FM stereo "R-ch" signal output or AM audio output. Add the specified de-emphasis constant.
6	Lch	O	L channel output	FM stereo "L-ch" signal output or AM audio output. Add the specified de-emphasis constant.
7	WC		write control	EEPROM write control. Writing permissible at "Low". Normally open.
8	SDBW	O	SD bandwidth	SD bandwidth signal output. For detection of detuning data for the RDS.
9	NC			Not used
10	VDD		power supply	Power supply pin for the digital section. DC 5V +/- 0.25V. Be careful about overlapping noise in the logic section.
11	DGND		digital ground	Grounding for the digital section.
12	CE2	I	chip enable-2	EEPROM chip enable. Active a "Low" To be pulled up to the "VDD" at 47kΩ
13	SL	I/O	signal level	Received FM/AM signal level (strength) output. Connect the specified load resistor and capacitor (10k Ω + 39k Ω //4,700pF)
14	DI/DO	I/O	data input/ data output	Data input/Data output To be pulled up to the "VDD" at 47kΩ
15	CK	I	clock	Clock input To be pulled up to the "VDD" at 47kΩ
16	CE1	I	chip enable-1	AF·RF chip enable. Active at "High" To be grounded at 47kΩ
17	NC			Not used
18	LDET	O	lock detector	Active at "Low". To be pulled up to the "VDD" at 47kΩ
19	CREQ	I	current request	Active at "Low". To be grounded at 47kΩ
20	NC			Not used
21	COMP	O	composite signal	FM composite signal output. r out < 100Ω
22	VCC		power supply	Analog section power supply pin.DC 8.4V +/- 0.3V
23	LOCH	I	local high	FM local high pin. When seeking local high, apply 5V together with "LOCL".
24	FMLOCL	I	FM local low	FM local low pin. When seeking local low, apply 5V to the base of the NPN transistor with which the specified resistor is being connected to the emitter. Keep it open in case of ordinary marketed models.
25	LOCL	I	local low	FM/AM local low pin. When seeking local low, apply 5V to the base of the NPN transistor. Since this pin is exclusive for AM when the FMLOCL is in use, do not drive it under FM.
26	RFGND		RF ground	Grounding for the antenna section.
27	FMANT	I	FM antenna input	FM antenna input. 75Ω. Surge absorber (DSP-201M-S00B) is necessary.
28	AMANT	I	AM antenna input	AM antenna input. High impedance. Connect to the antenna through an L (LAU type) of 4.7μH.To cope with the power transmission line hums, insert a series circuit consisting of an L (a coil of about 100mH) + R (a resistor of 470 Ω to 2.2kΩ) between the GND.

7.3 OPERATIONAL FLOW CHART



Completes power-on operation.
(After that, proceed to each source operation)

7.4 CLEANING

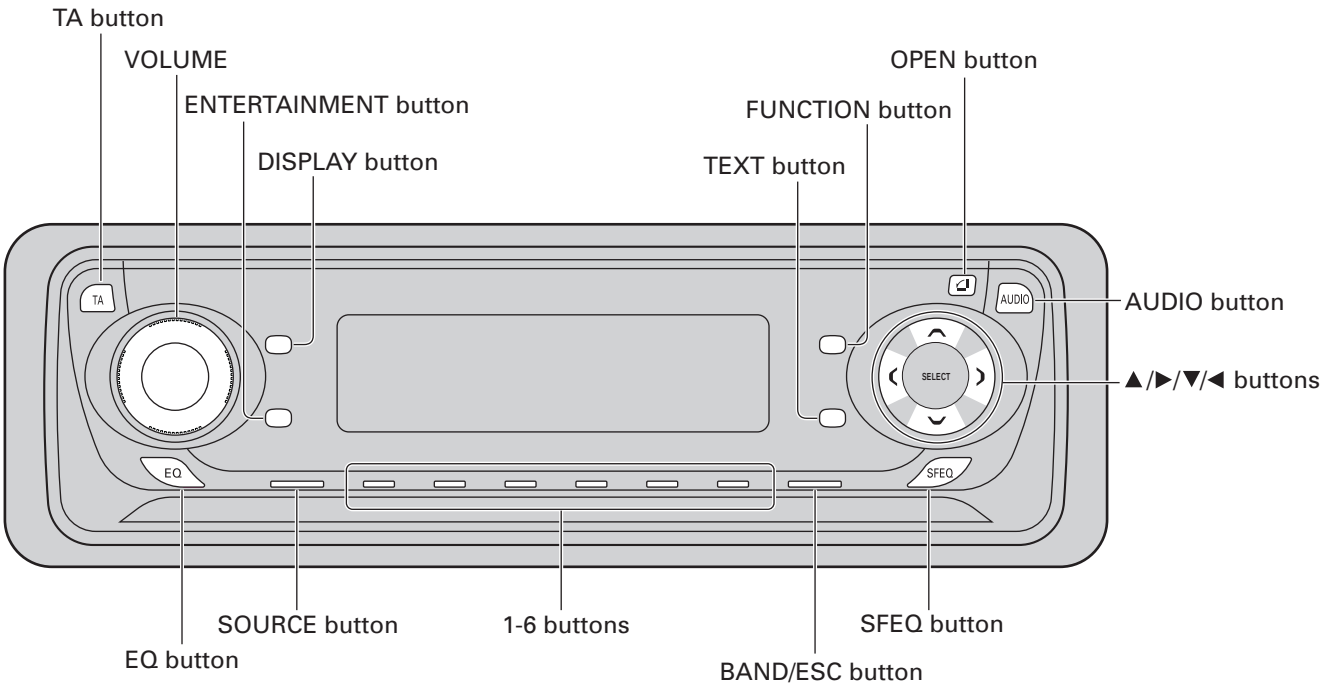
Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
Cassette heads Pinch rollers Capstans	Cleaning paper : GED-008

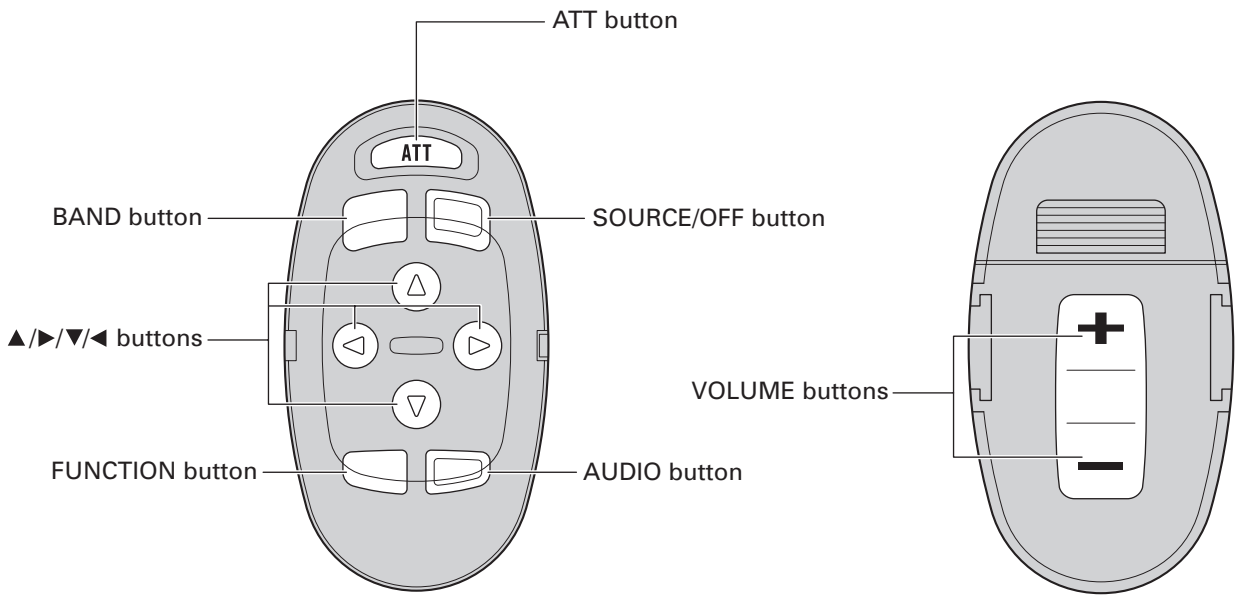
8. OPERATIONS AND SPECIFICATIONS
8.1 OPERATIONS

● **KEH-P7020R/XN/EW**

HEAD UNIT

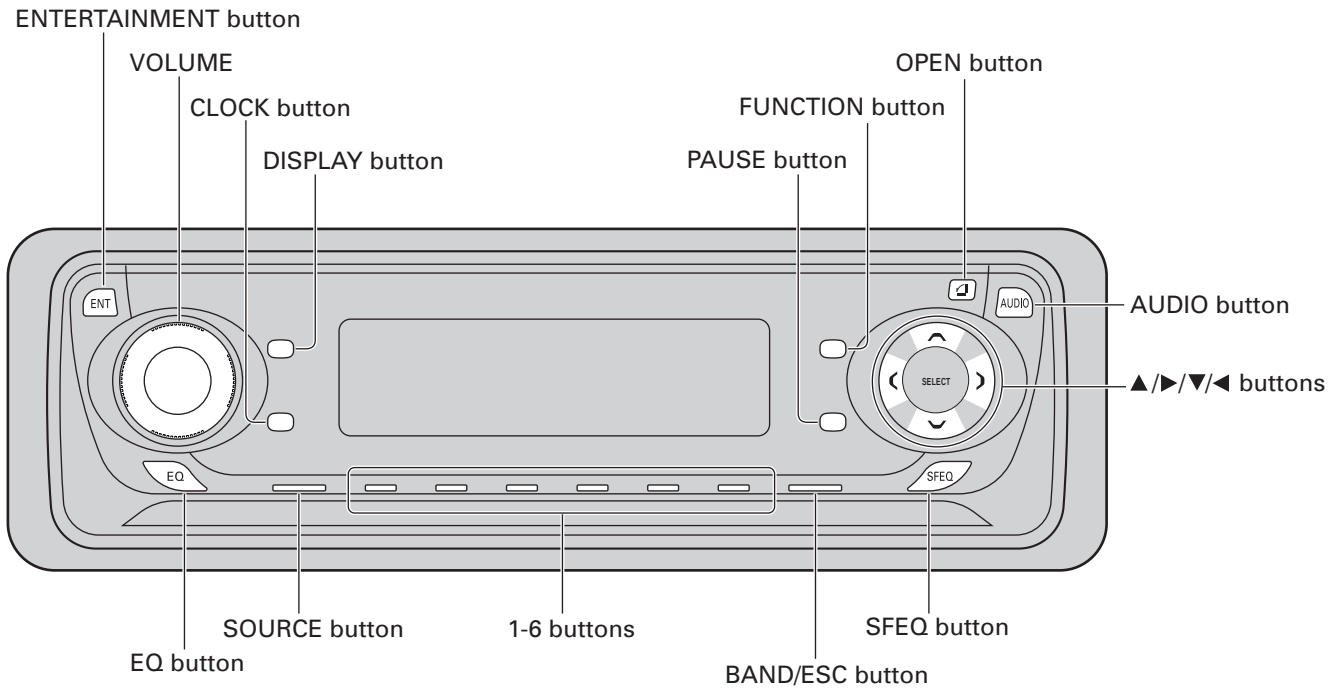


REMOTE CONTROL ASSY

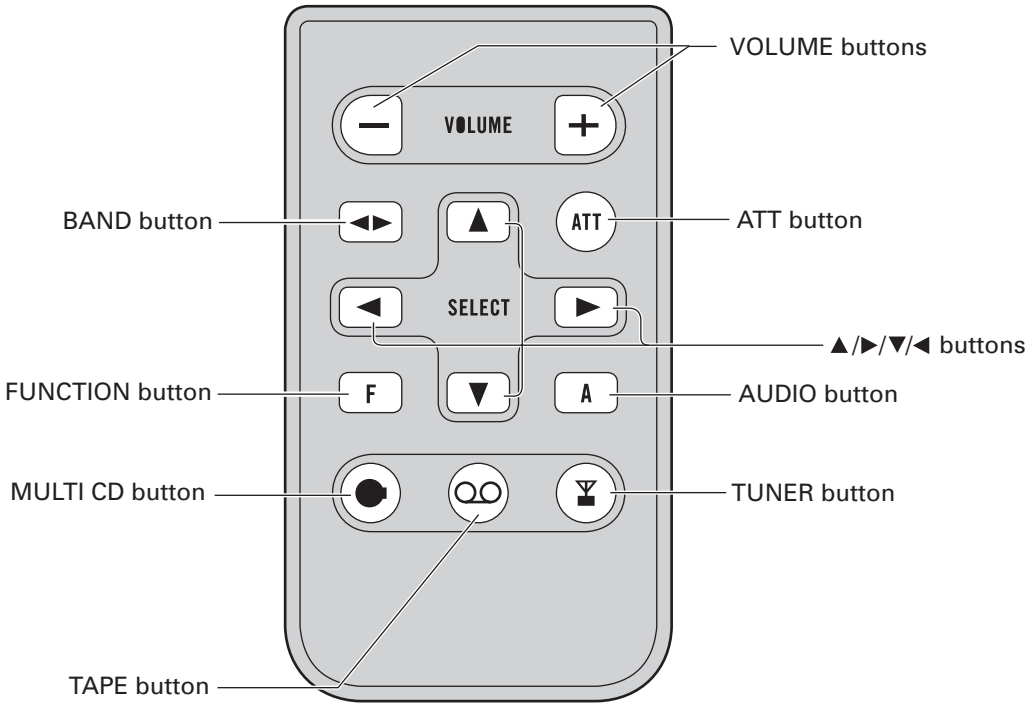


● **KEH-P7025/XN/ES**

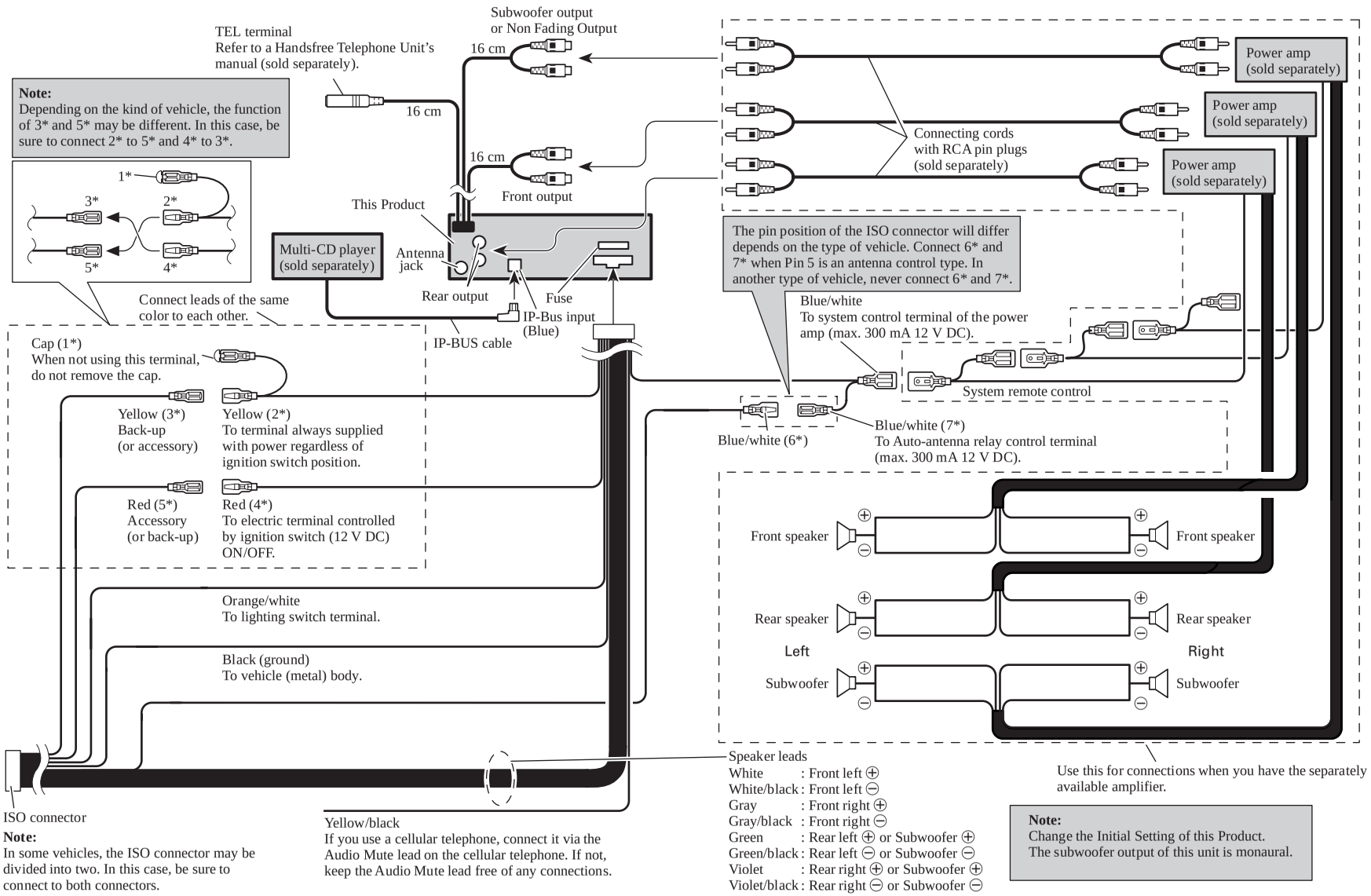
HEAD UNIT



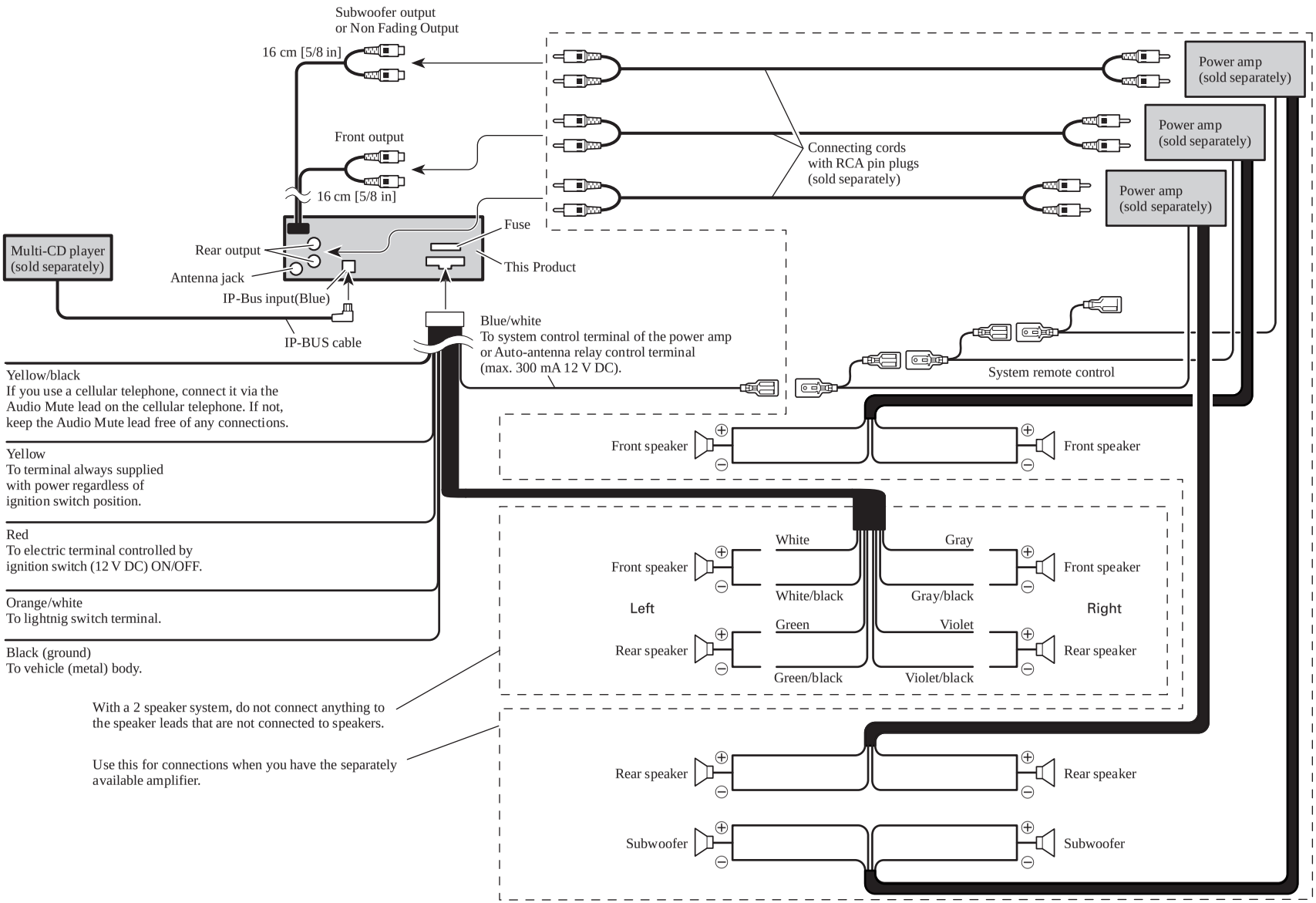
REMOTE CONTROL UNIT



● CONNECTION DIAGRAM (KEH-P7020R/XN/EW)


TEL terminal
Refer to a Handsfree Telephone Unit's manual (sold separately).
Subwoofer output or Non Fading Output
16 cm
16 cm
16 cm
Front output
Note:
Depending on the kind of vehicle, the function of 3* and 5* may be different. In this case, be sure to connect 2* to 5* and 4* to 3*.
1*
2*
3*
4*
5*
This Product
Multi-CD player (sold separately)
Antenna jack
Rear output
Fuse
IP-Bus input (Blue)
IP-BUS cable
Connect leads of the same color to each other.
Cap (1*)
When not using this terminal, do not remove the cap.
Yellow (3*)
Back-up
(or accessory)
Yellow (2*)
To terminal always supplied with power regardless of ignition switch position.
Red (5*)
Accessory
(or back-up)
Red (4*)
To electric terminal controlled by ignition switch (12 V DC) ON/OFF.
Orange/white
To lighting switch terminal.
Black (ground)
To vehicle (metal) body.
ISO connector
Note:
In some vehicles, the ISO connector may be divided into two. In this case, be sure to connect to both connectors.
Yellow/black
If you use a cellular telephone, connect it via the Audio Mute lead on the cellular telephone. If not, keep the Audio Mute lead free of any connections.
Power amp (sold separately)
Power amp (sold separately)
Power amp (sold separately)
Connecting cords with RCA pin plugs (sold separately)
The pin position of the ISO connector will differ depends on the type of vehicle. Connect 6* and 7* when Pin 5 is an antenna control type. In another type of vehicle, never connect 6* and 7*.
Blue/white
To system control terminal of the power amp (max. 300 mA 12 V DC).
System remote control
Blue/white (6*)
Blue/white (7*)
To Auto-antenna relay control terminal (max. 300 mA 12 V DC).
Front speaker
Front speaker
Rear speaker
Rear speaker
Left
Right
Subwoofer
Subwoofer
Speaker leads
White : Front left ⊕
White/black : Front left ⊖
Gray : Front right ⊕
Gray/black : Front right ⊖
Green : Rear left ⊕ or Subwoofer ⊕
Green/black : Rear left ⊖ or Subwoofer ⊖
Violet : Rear right ⊕ or Subwoofer ⊕
Violet/black : Rear right ⊖ or Subwoofer ⊖
Use this for connections when you have the separately available amplifier.
Note:
Change the Initial Setting of this Product.
The subwoofer output of this unit is monaural.

● CONNECTION DIAGRAM (KEH-P7025/XN/ES)



8.2 SPECIFICATIONS

● KEH-P7020R/XN/EW

General

Power source ..... 14.4 V DC
(10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption
..... 10.0 A
Backup current ..... 5 mA or less
Dimensions (W x H x D):
Chassis (DIN) ..... 178 x 50 x 157 mm
Nose ..... 188 x 58 x 19 mm
Weight ..... 1.4 kg

Audio

Maximum power output 50 W x 4
for subwoofer (70 W x 1 ch/2 Ω)
25 W x 4 (BRI)
Continuous power output 27 W x 4
(DIN 45324, +B=14.4 V)
Load impedance ..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance
..... 2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer):
(Low)
Frequency ..... 40/80/100/160 Hz
Q Factor 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain ..... ±12 dB
(Mid)
Frequency ..... 200/500/1 k/2 k Hz
Q Factor 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain ..... ±12 dB
(High)
Frequency ..... 3.15 k/8 k/10 k/12.5 k Hz
Q Factor 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain ..... ±12 dB
Loudness contour:
(Low) ..... +3.5 dB (100 Hz)
+3 dB (10 kHz)
(Mid) ..... +10 dB (100 Hz)
+6.5 dB (10 kHz)
(High) ..... +11 dB (100 Hz)
+11 dB (10 kHz)
(Volume: –30 dB)
Tone controls:
(Bass)
Frequency ..... 40/63/100/160 Hz
Gain ..... ±12 dB
(Treble)
Frequency ..... 2.5 k/4 k/6.3 k/10 k Hz
Gain ..... ±12 dB
HPF:
Frequency ..... 50/80/125 Hz
Slope ..... –12 dB/oct
Subwoofer:
Frequency ..... 50/80/125 Hz
Slope ..... –18 dB/oct
Gain ..... ±12 dB
Phase ..... Normal/Reverse

Cassette player

Tape ..... Compact cassette tape
(C-30 – C-90)
Tape speed ..... 4.76 cm/sec.(+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewinding time
..... Approx. 100 sec (C-60)
Wow & flutter ..... 0.09% (WRMS)
Frequency response:
Metal ..... 30 – 19,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio:
Metal:
Dolby B NR IN 67 dB (IEC-A network)
Dolby NR OUT 61 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108.0 MHz
Usable sensitivity ..... 9 dBf (0.8 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity 15 dBf (1.5 μV/75 Ω, mono)
Signal-to-noise ratio . 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response .. 30 – 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 – 1,602 kHz (9 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 – 281 kHz
Usable sensitivity ..... 30 μV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note

- Specifications and the design are subject to possible modifications without notice due to improvements.

● KEH-P7025/XN/ES

General

Power source ..... 14.4 V DC
(10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption
..... 10.0 A
Backup current ..... 5 mA or less
Dimensions (W x H x D):
(DIN) .....Chassis 178 x 50 x 157 mm
Nose ..... 188 x 58 x 19 mm
(D) Chassis ..... 178 x 50 x 162 mm
Nose ..... 170 x 46 x 14 mm
Weight ..... 1.4 kg

Audio

Continuous power output is 22 W per channnel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output 50 W x 4
for subwoofer (70 W x 1 ch/2 Ω)
Load impedance ..... 4 Ω (4 – 8 Ω [2 Ω for 1 ch] allowable)
Preout max output level/output impedance
..... 2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer):
(Low)
Frequency ..... 40/80/100/160 Hz
Q Factor 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain ..... ±12 dB
(Mid)
Frequency ..... 200/500/1 k/2 k Hz
Q Factor 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain ..... ±12 dB
(High)
Frequency ..... 3.15 k/8 k/10 k/12.5 k Hz
Q Factor 0.35/0.59/0.95/1.15
(+6 dB when boosted)
Gain ..... ±12 dB
Loudness contour:
(Low) ..... +3.5 dB (100 Hz)
+3 dB (10 kHz)
(Mid) ..... +10 dB (100 Hz)
+6.5 dB (10 kHz)
(High) ..... +11 dB (100 Hz)
+11 dB (10 kHz)
(Volume: –30 dB)
Tone controls:
(Bass)
Frequency ..... 40/63/100/160 Hz
Gain ..... ±12 dB(Treble)
Frequency ..... 2.5 k/4 k/6.3 k/10 k Hz
Gain ..... ±12 dB
HPF:
Frequency ..... 50/80/125 Hz
Slope ..... –12 dB/oct
Subwoofer:
Frequency ..... 50/80/125 Hz
Slope ..... –18 dB/oct
Gain ..... ±12 dB
Phase ..... Normal/Reverse

Cassette player

Tape ..... Compact cassette tape
(C-30 – C-90)
Tape speed ..... 4.76 cm/sec.(+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewinding time
..... Approx. 100 sec (C-60)
Wow & flutter ..... 0.09% (WRMS)
Frequency response:
Metal ..... 30 – 19,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio:
Metal:
Dolby B NR IN 67 dB (IEC-A network)
Dolby NR OUT 61 dB (IEC-A network)

FM tuner

Frequency range ..... 87.5 – 108 MHz
Usable sensitivity ..... 9 dBf (0.8 μV/75 Ω, mono, S/N:30 dB)
50 dB quieting sensitivity 15 dBf (1.5 μV/75 Ω, mono)
Signal-to-noise ratio . 70 dB (IEC-A network)
Distortion ..... 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response .. 30 – 15,000 Hz (± 3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range ..... 530 – 1,640 kHz (10 kHz)
531 – 1,602 kHz (9 kHz)
Usable sensitivity ..... 18 μV (S/N: 20 dB)
Selectivity ..... 50 dB (± 10 kHz)
50 dB (± 9 kHz)

Infrared remote control

Wavelength ..... 940 nm ± 50 nm
Output ..... typ; 12 mw/sr per infrared LED

Note

- Specifications and the design are subject to possible modifications without notice due to improvements.

Service Manual

ORDER NO.
CRT2406

CASSETTE MECHANISM MODULE(3L)

CX-1011

- **This service manual describes operation of the cassette mechanism incorporated in models listed in the table below.**
- **When performing repairs use this manual together with the specific manual for model under repair.**

Model	Service Manual	Cassette Mechanism Module	Deck Unit
KEH-P5900R/X1M/EW	CRT2399	EXK4000	EWM1023
KEH-P4900R/X1M/EW	CRT2399		
KEH-P4930R/X1M/EW	CRT2399		
KEH-P490/X1M/UC	CRT2398		
KEH-P4900/X1M/UC	CRT2398		
KEH-P4950/X1M/ES	CRT2398		
KEH-P4950J/X1M/ES	CRT2400		
KEH-P6900R/X1N/EW	CRT2429	EXK4010	EWM1024
KEH-P690/X1N/UC	CRT2430		
KEH-P6950/X1N/ES	CRT2430		
KEH-P6910R/X1N/EE	CRT2429		
KEH-P5900/X1N/UC	CRT2431		
KEH-P5950/X1N/ES	CRT2431		
KEH-3930R/X1M/EW	CRT2420	EXK4100	EWM1023
KEH-3900R/X1M/EW	CRT2420		
KEH-3910/X1M/EE	CRT2420		
KEH-3950/X1M/ES	CRT2421		

CONTENTS

1. MECHANISM DESCRIPTION AND GREASING.....2
2. GREASE APPLICATION LOCATION AND GREASE NAME 12
3. DISASSEMBLY.....28
4. ADJUSTMENT 29

PIONEER CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 253 Alexandra Road, #04-01, Singapore 159936

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K-ZZB. OCT. 1999 Printed in Japan

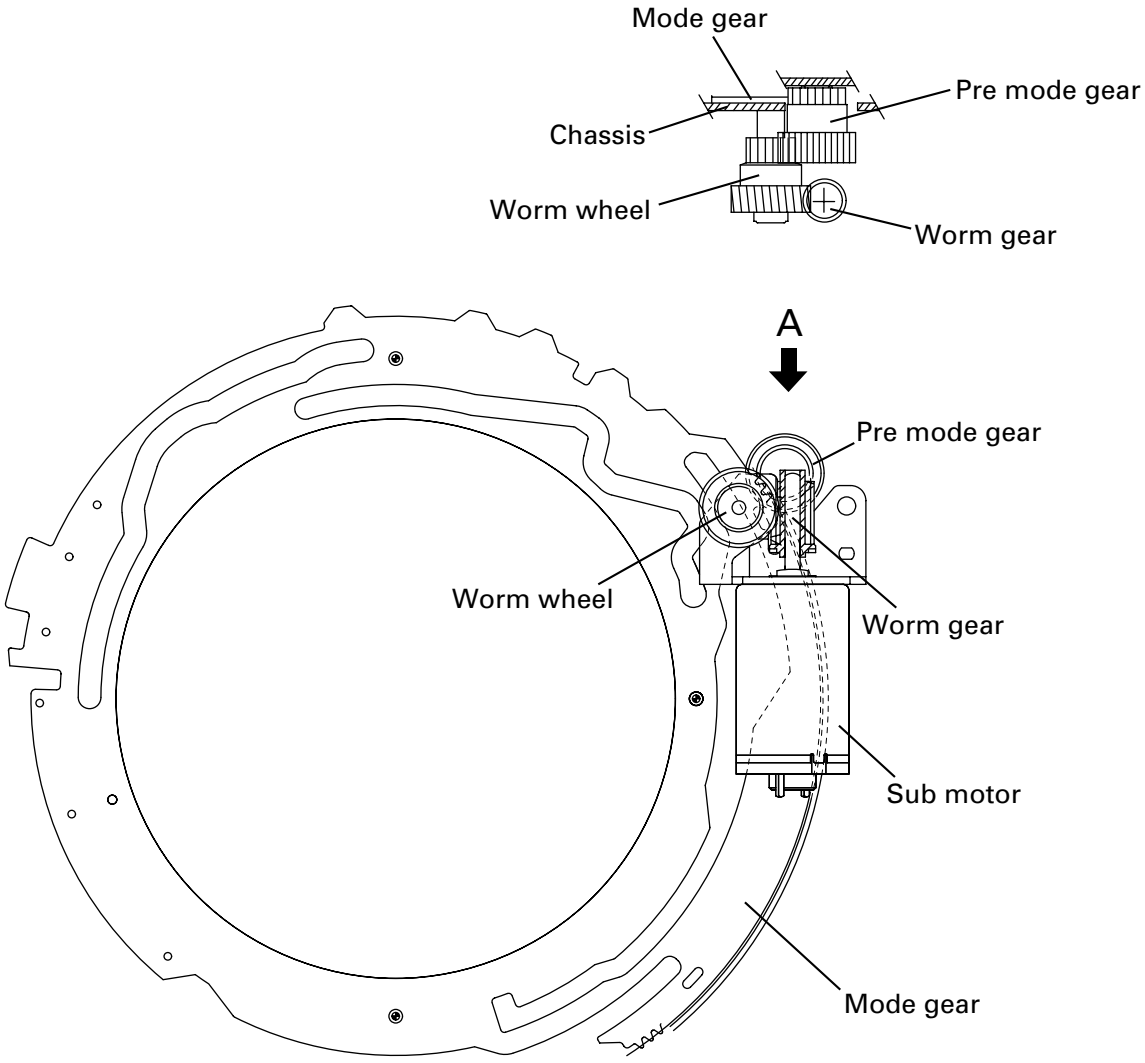
1. MECHANISM DESCRIPTION

1.1 DRIVE OPERATION

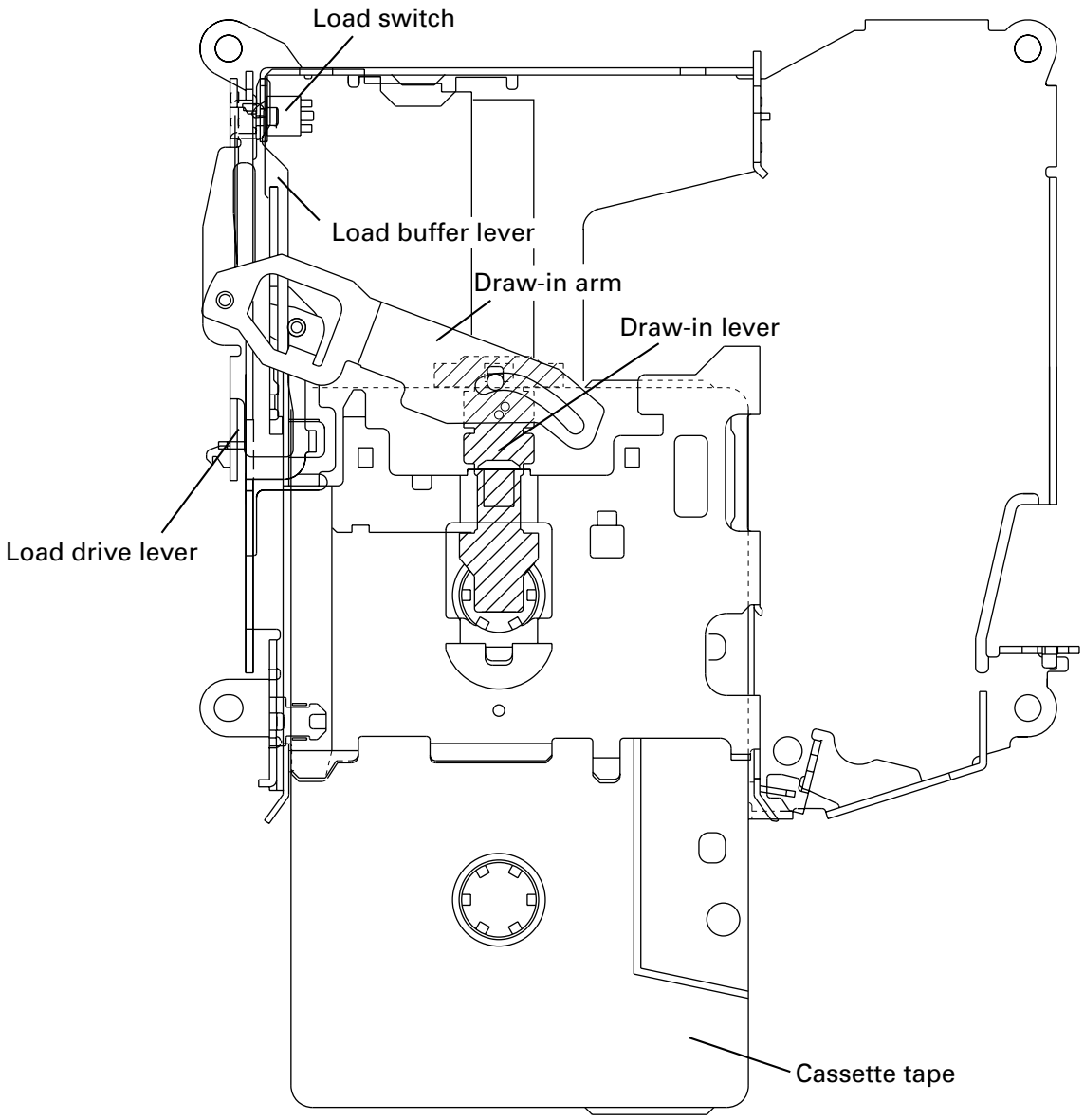
Inserting the cassette tape → Draw in → Put in down → Release ⟷ Forward play ⟷ REW ⟷ FF ⟷ Reverse play

Eject ← Draw out ← Lift ←

All motive force(except that for tape running) is supplied by the sub-motor.
All the operation modes including tape insertion and ejection are switched via the mode gear.



1.2 LOADING AND EJECT OPERATIONS(1)



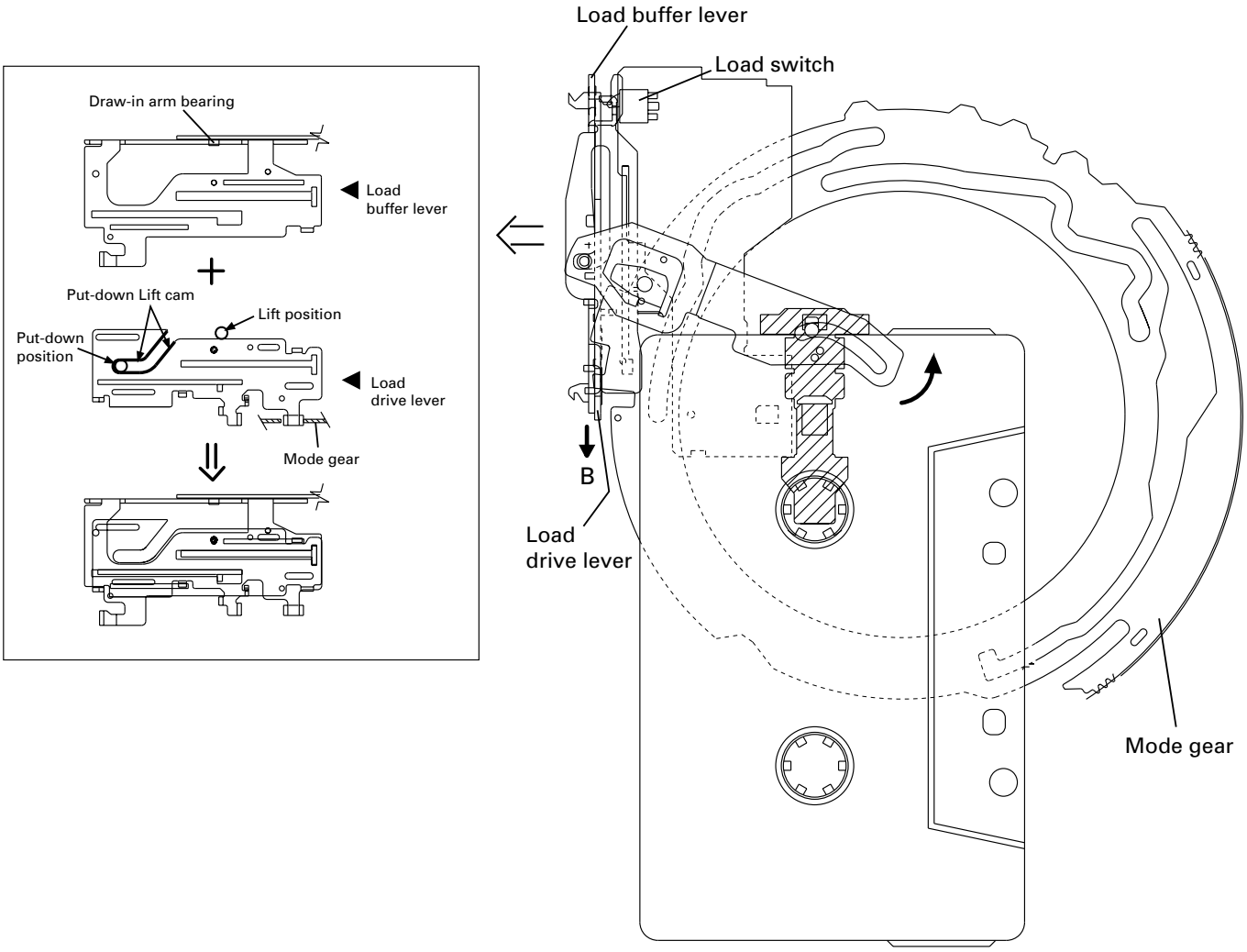
● Loading operation

1. Insert a cassette tape into the slot.
2. The cassette tape pushes the draw-in lever. Then the load switch is turned ON via the draw-in arm and load buffer lever.
3. The sub motor starts running.
4. The sub motor turns the mode gear. Then the mode gear moves the load drive lever and load buffer lever.
5. The shaft holder of the load buffer lever rotates the draw-in arm to draw in the cassette tape.

● Eject operation

1. The cassette tape is ejected in accordance with the reverse of the loading operations. After that, the load switch is turned OFF and the sub motor stops rotating.

1.3 LOADING AND EJECT OPERATIONS(2)



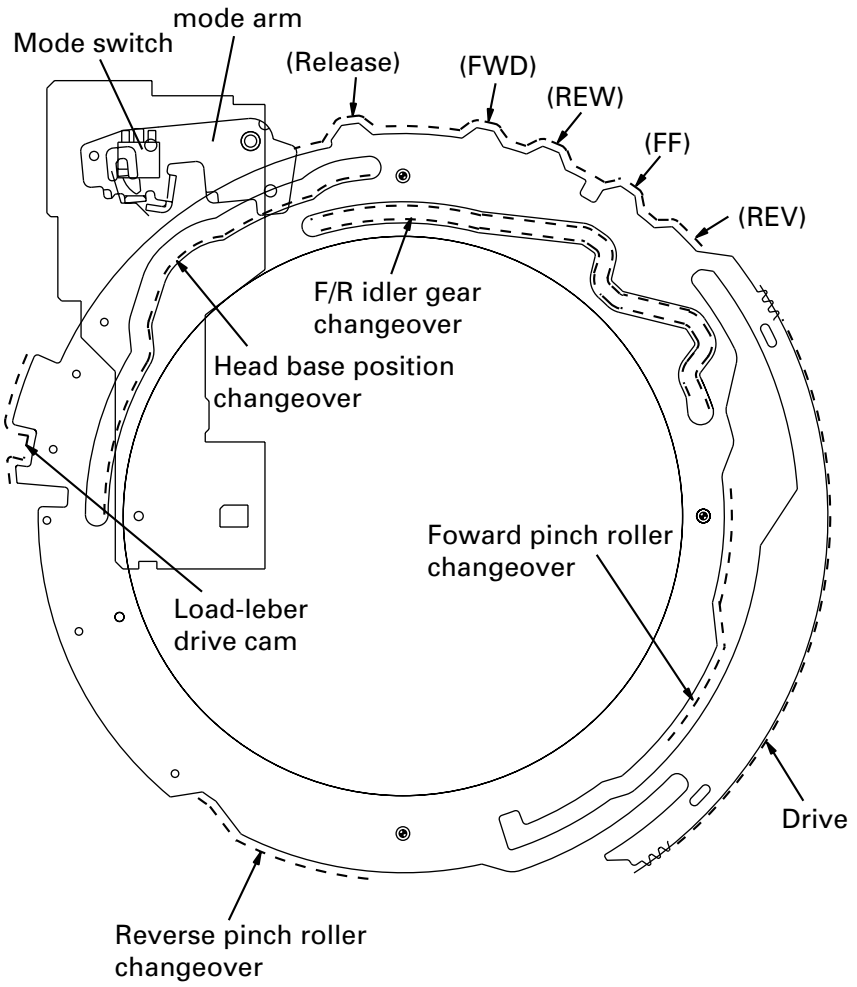
● Loading operation

1. When the mode gear rotates, the load drive lever moves in the direction B marked with an arrow in the figure.
2. As the load buffer lever is linked with the load drive lever via a spring, the load buffer lever turns the draw-in arm in the cassette.

● Eject operation

1. Eject operation is done in accordance with the reverse of the loading operation.

1.4 MODE CHANGEOVER



The mode gear is rotated by rotation of the pre mode gear which is driven by the sub-motor.

The modes are in series in the order of "release"⟷"forward play"⟷"REW"⟷"FF"⟷"reverse play".

The rotation of the mode gear makes changeover of the head position, press contact between the pinch rollers(forward, reverse), the rewinding reel rotation, etc.

The actions to be performed in the separate mode are show in Fig.1 through 5.

● **Release**

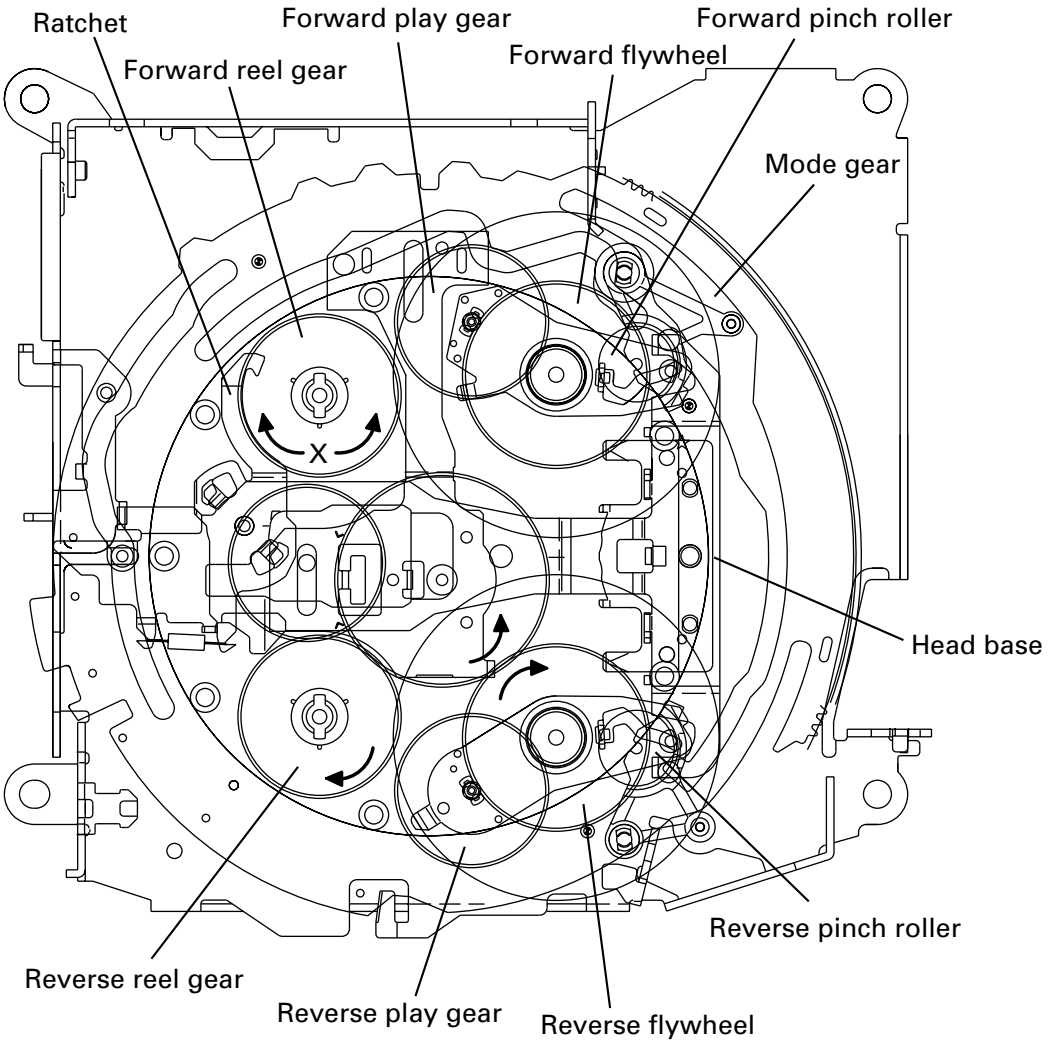


Fig.1

● **Forward Play**

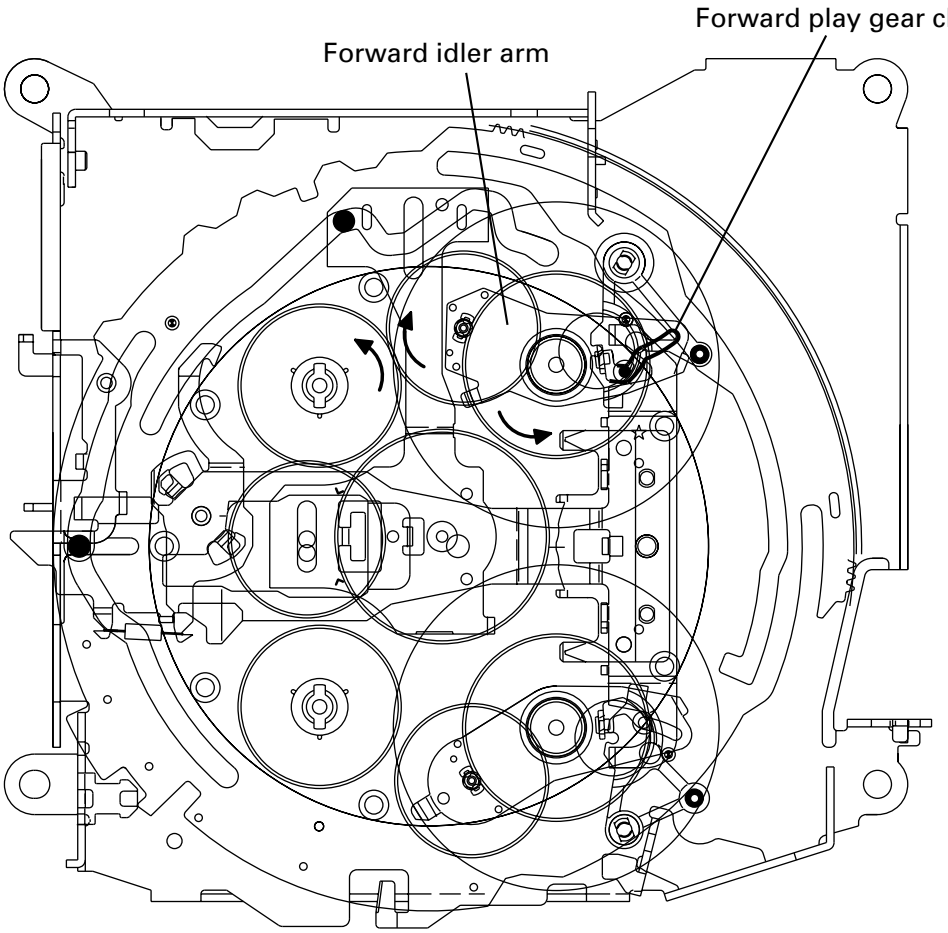


Fig.2

● **REW**

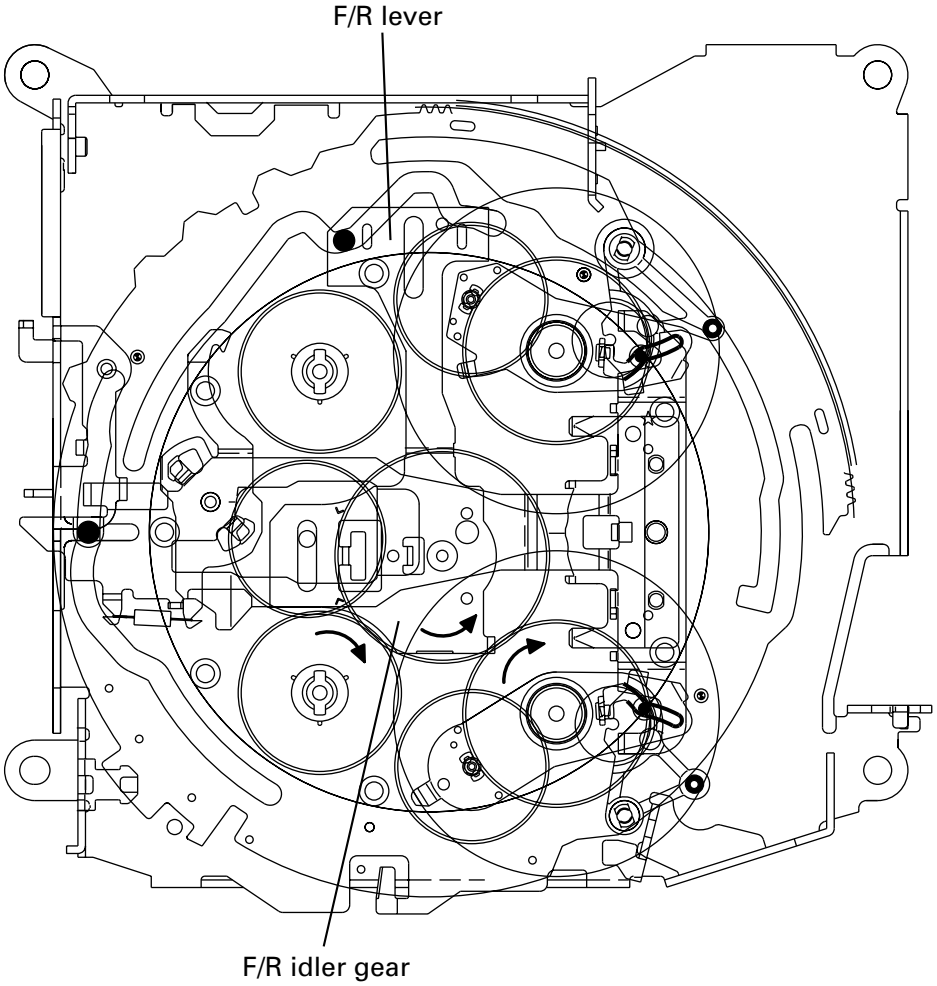


Fig.3

● **FF**

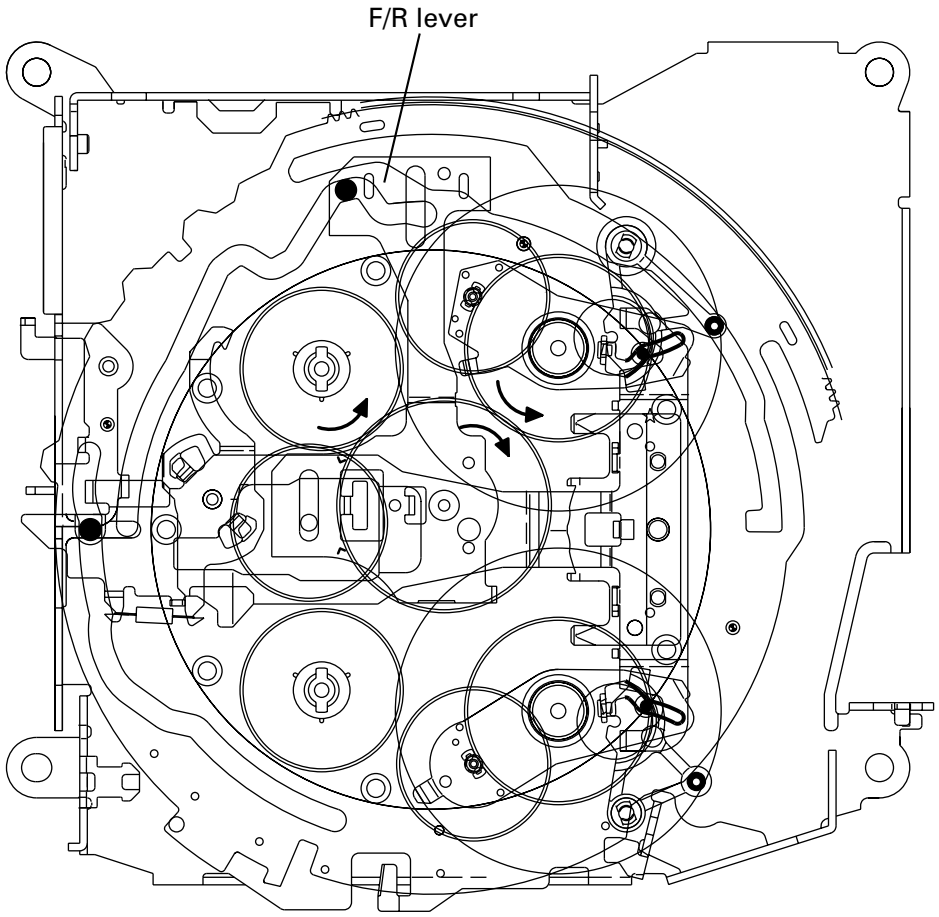


Fig.4

● **Reverse Play**

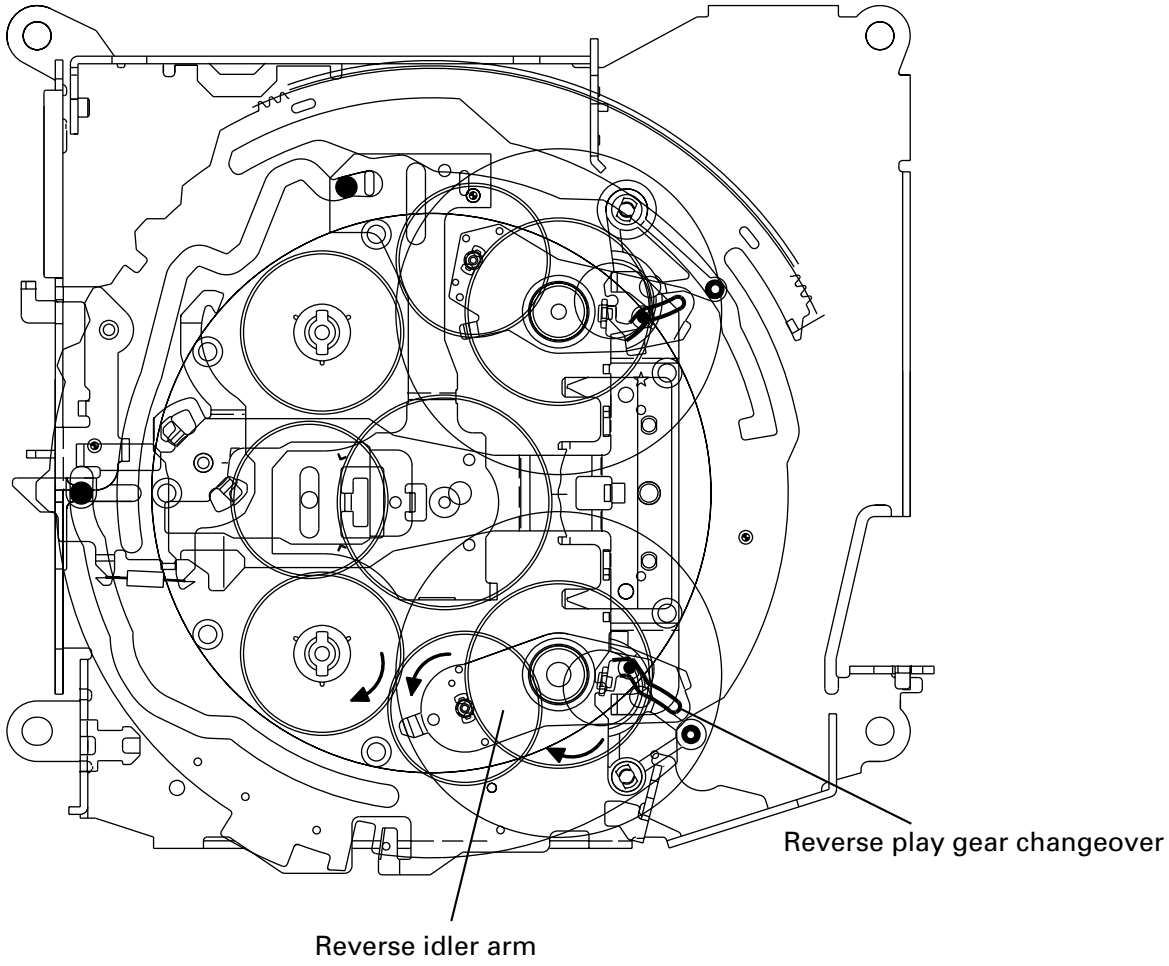
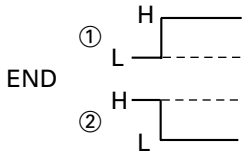
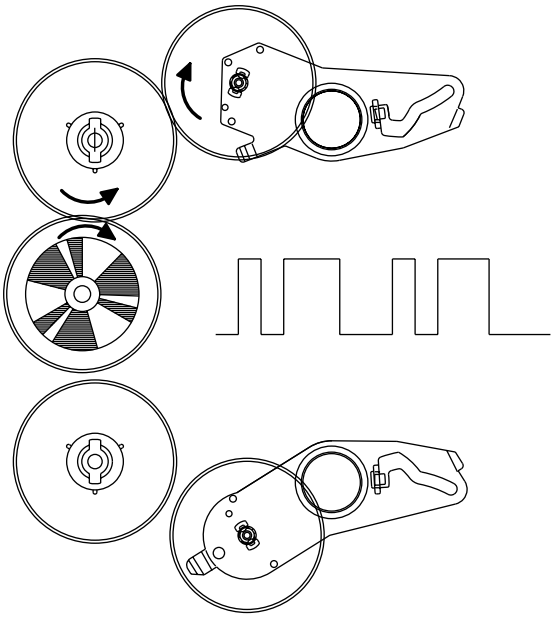


Fig.5

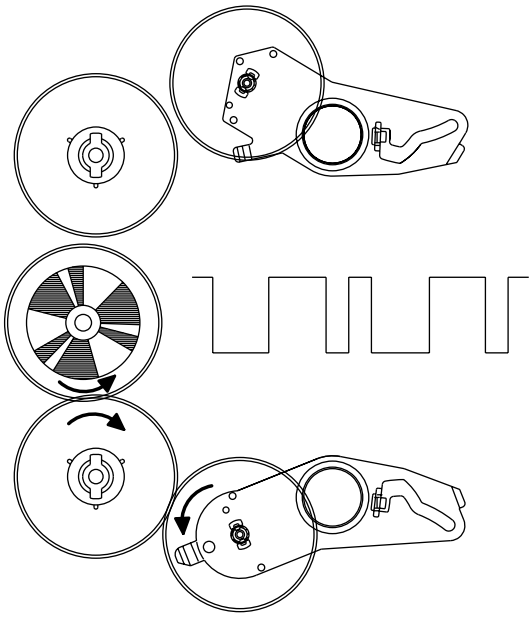
1.5 END SENSE



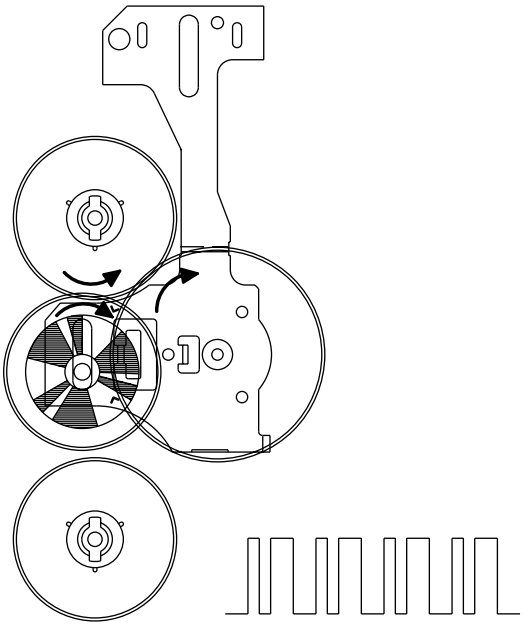
FWD



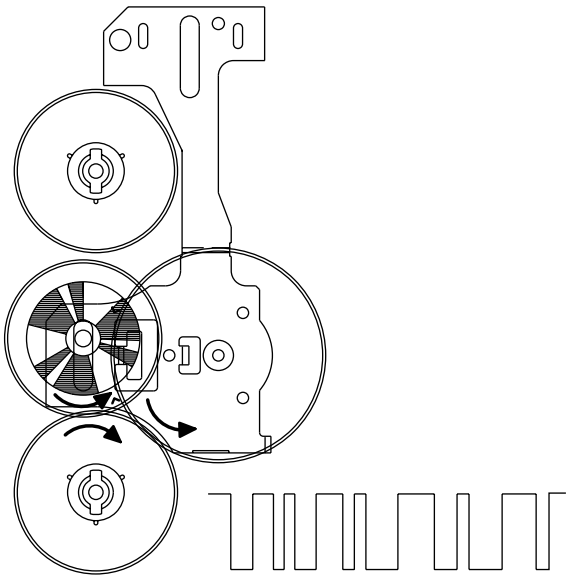
REV



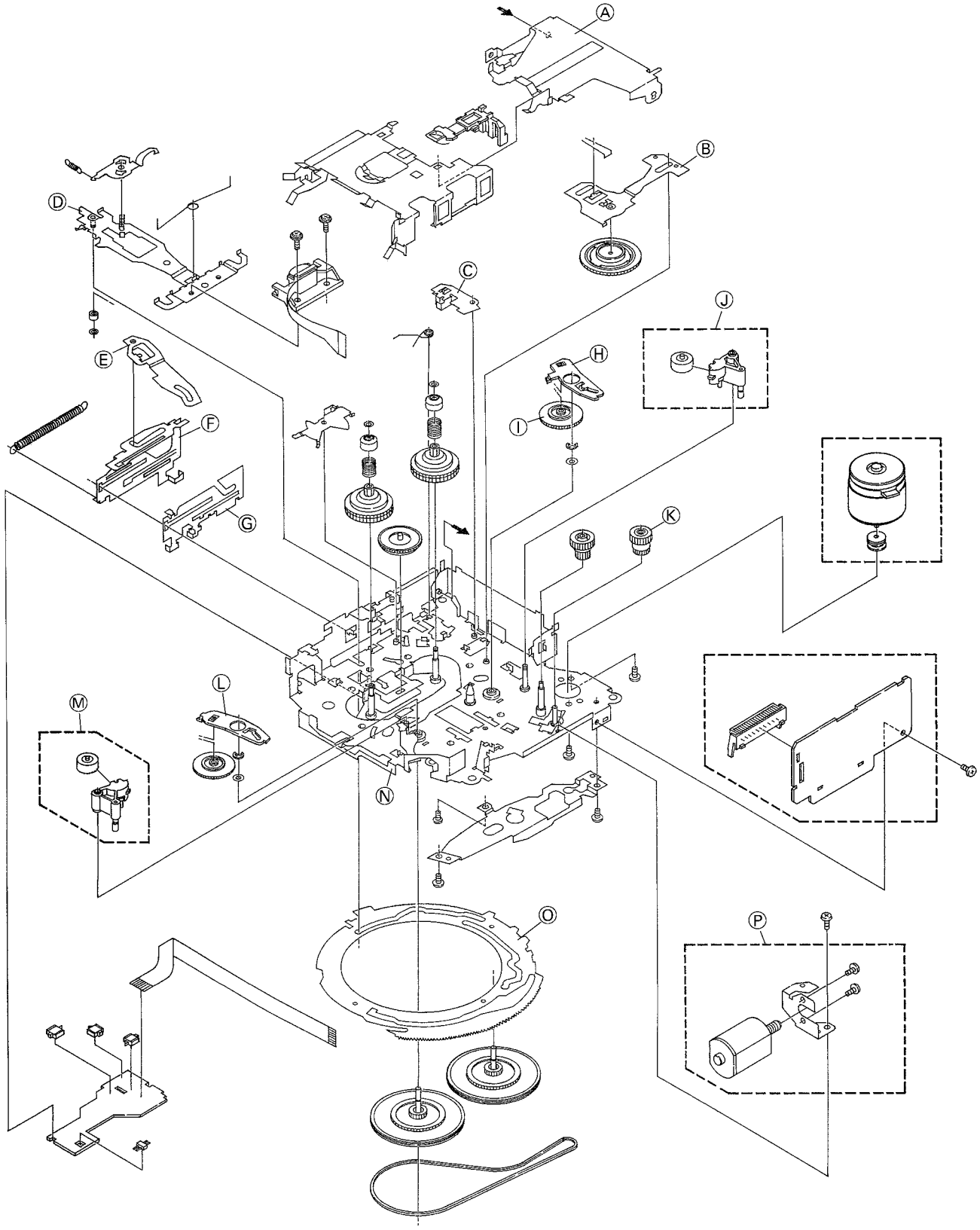
FF



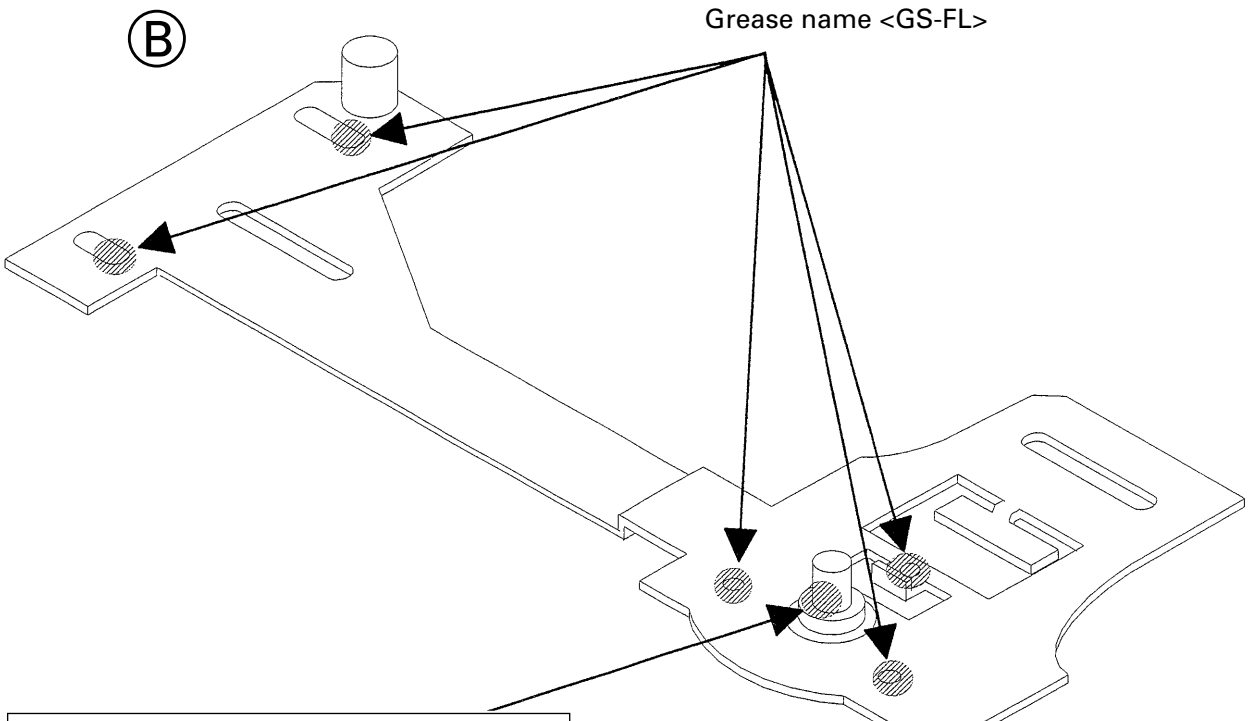
REW



2. GREASE APPLICATION LOCATION AND GREASE NAME

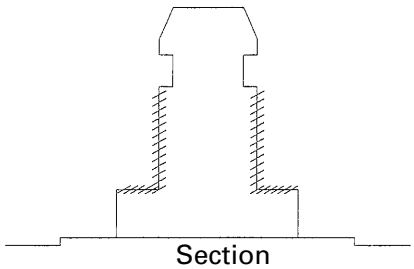


● **F/R Lever 1**



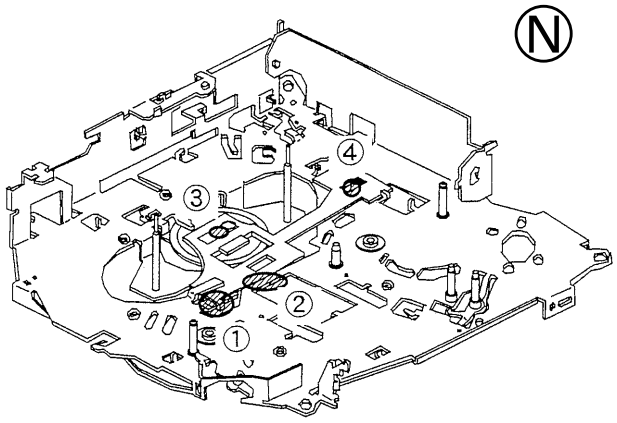
The root of Shaft.

Slant-part as following figure.

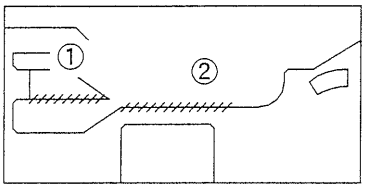


Section

● **Chassis 1 and F/R Lever 2**

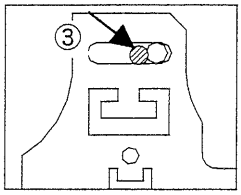


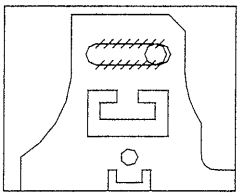
Ⓝ



①② Grease name <GS-FL>
The slant-parts in left figure.
The rubbing part between chassis and F/R lever.

Ⓑ

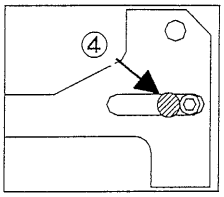


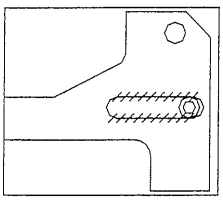


③ Grease name <CS-FL>
The side of shaft (after fix F/R lever).
The slant-parts in left figure.

The rubbing part between F/R lever and shaft.

Ⓑ

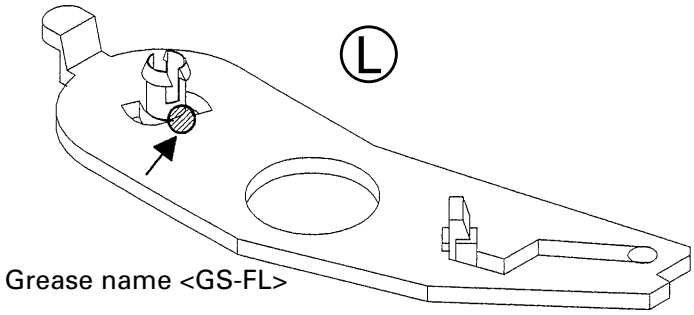




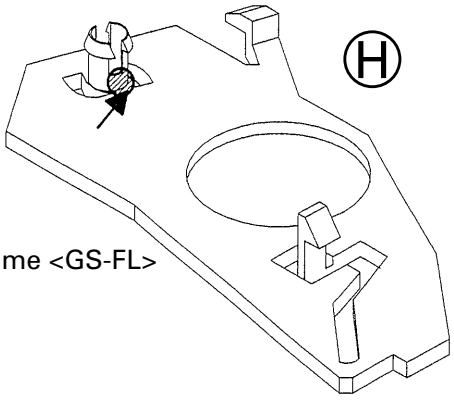
④ Grease name <GS-FL>
The side of bearing (after fix F/R lever).
The slant-parts in left figure.

The rubbing part between F/R lever and bearing.

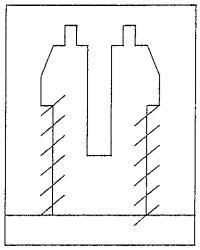
● **Idler arm**



Grease name <GS-FL>



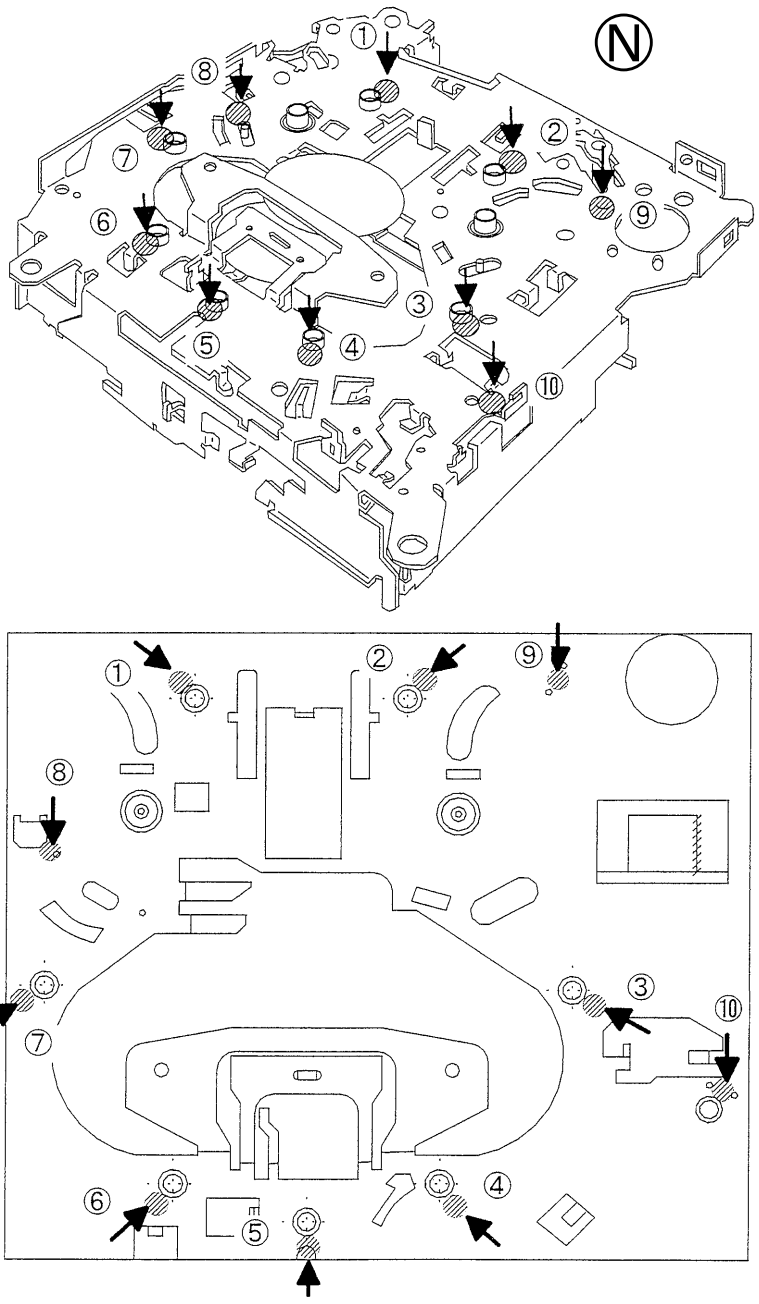
Grease name <GS-FL>



Each the root of boss.

Slant-part in left figure.

● **Chassis 2**



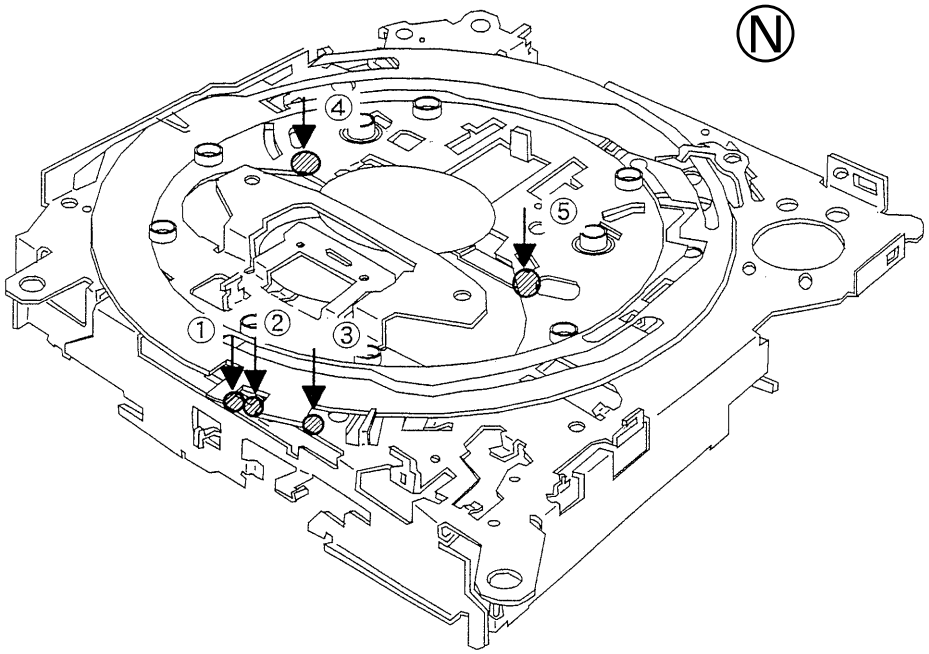
①②③④⑤⑥⑦ Grease name <GS-FLB>
Each the side of bearing.
Rubbing part between bearing and mode gear.

⑧ Grease name <GS-FLB>
The part between carved seal and whole.

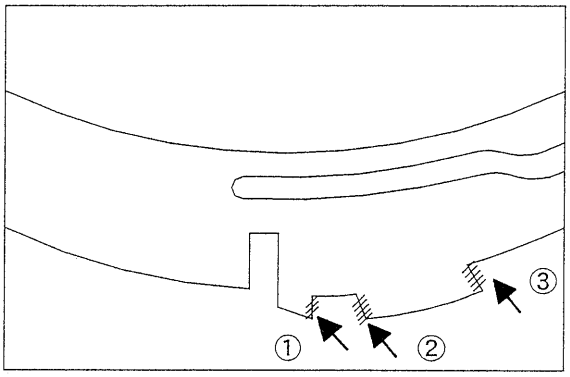
⑨⑩ Grease name <GS-FLB>
Each the part between carved seals.

Chassis and half-pierce of mode gear.

● **Mode gear and Chassis 3**



Ⓞ

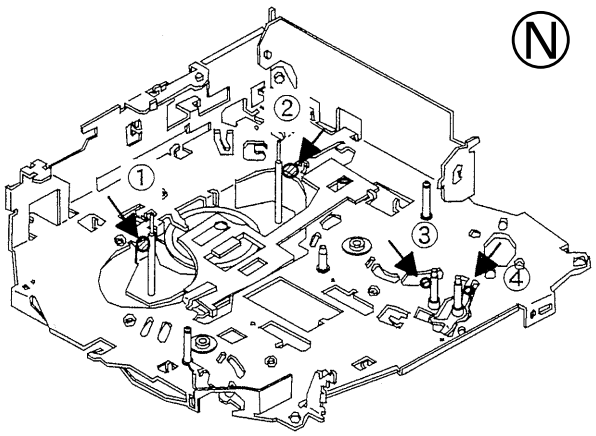


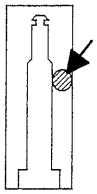
①②③ Grease name <GS-FLB>
Each the edge of cam (mode gear).

Slant-part in left figure.

④⑤ Grease name <GS-FLB>
Each the carved seal.
Rubbing part between chassis and idle gear.

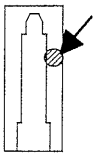
● **Chassis 4**





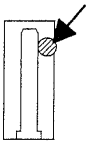
①② Grease name <GS-PG641>
Each the upper side of reel shaft (middle-step).

Slant-part in left figure.



③
The upper side of worm gear shaft.
The side and bottom of worm gear shaft.

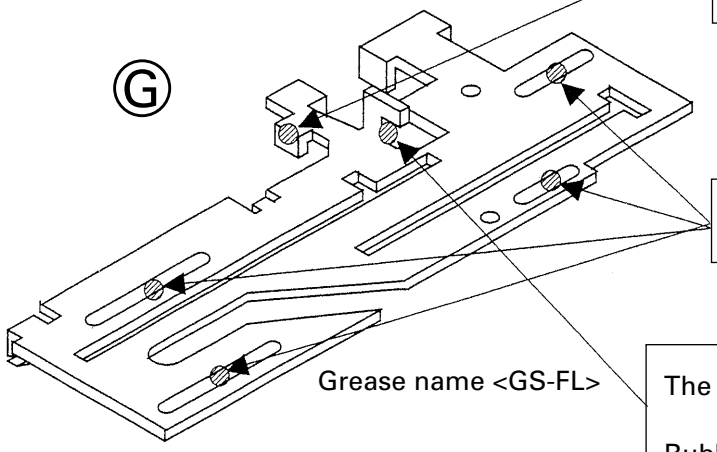
Slant-part in left figure.



④
The upper side of pre mode gear shaft.
The side and bottom of pre mode gear shaft.

Slant-part in left figure.

● **Put-down lever 1**



The bend part.

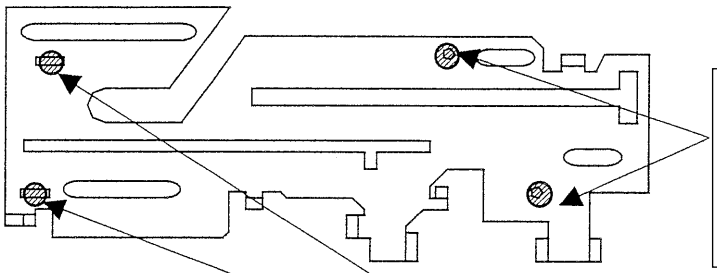
Rubbing part between load lever and HD base.

Each the half-pierce.

Grease name <GS-FL>

The point in left figure.

Rubbing part between load lever and edge (chassis).



Each the half-pierce.

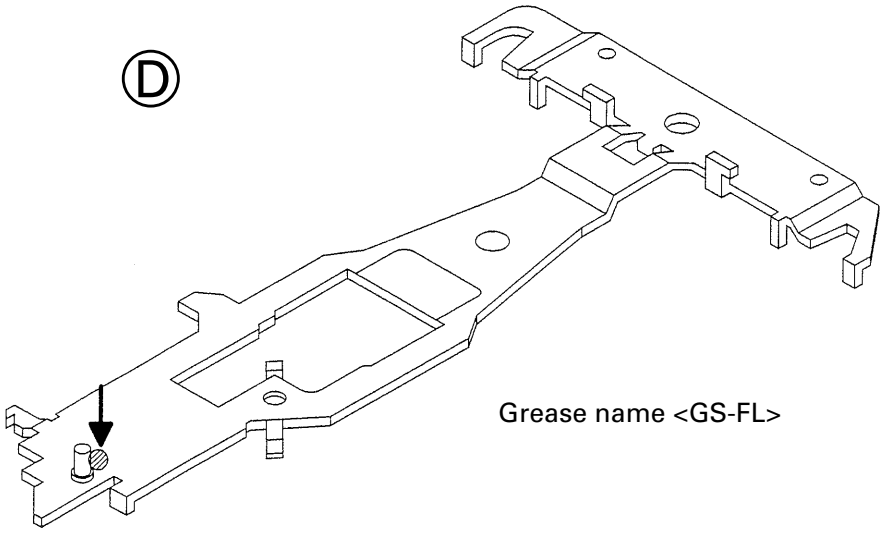
Rubbing part between half-pierce and load buffer lever.

Grease name <GS-FL>

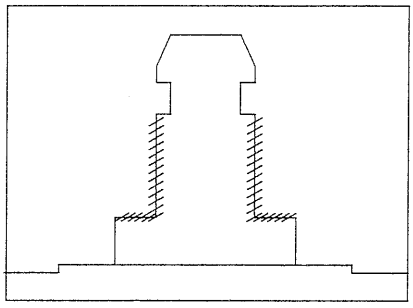
Each the carved seal.

Rubbing part between load lever and half-pierce (load buffer lever).

● **HD base**



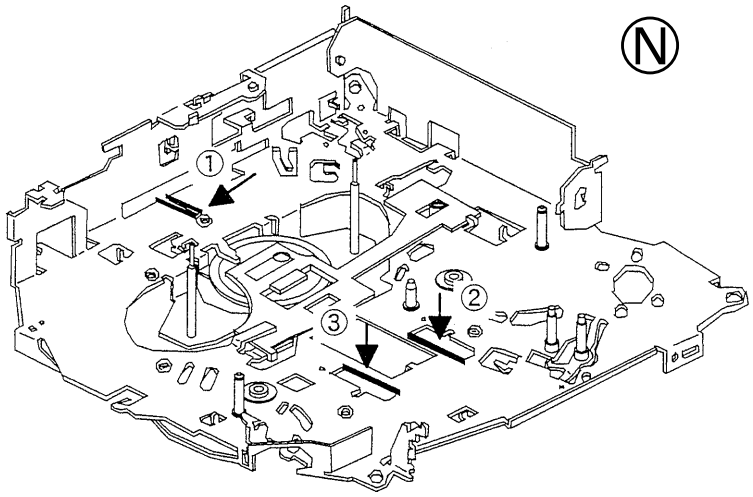
Grease name <GS-FL>

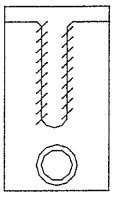


The side of shaft.
The side and bottom of shaft.

Slant-part in left figure.

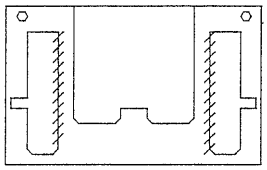
● **Chassis 5**





① Grease name <GS-FL>
The edge of slant-part in left figure.

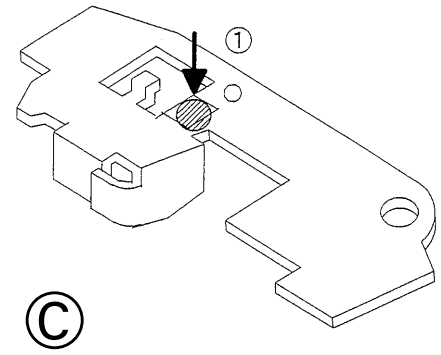
Rubbing between chassis and shaft of HD base.



②③ Grease name <GS-FL>
The edge of slant-part in left figure.

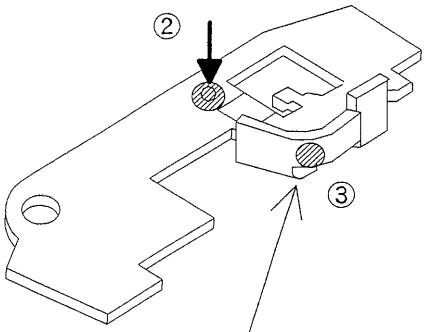
Rubbing between chassis and bend of HD base.

● **Mode arm**

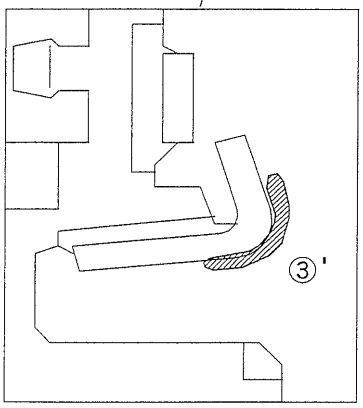


① Grease name <GS-FL>
The part in left figure.

Rubbing between mode arm and spring.



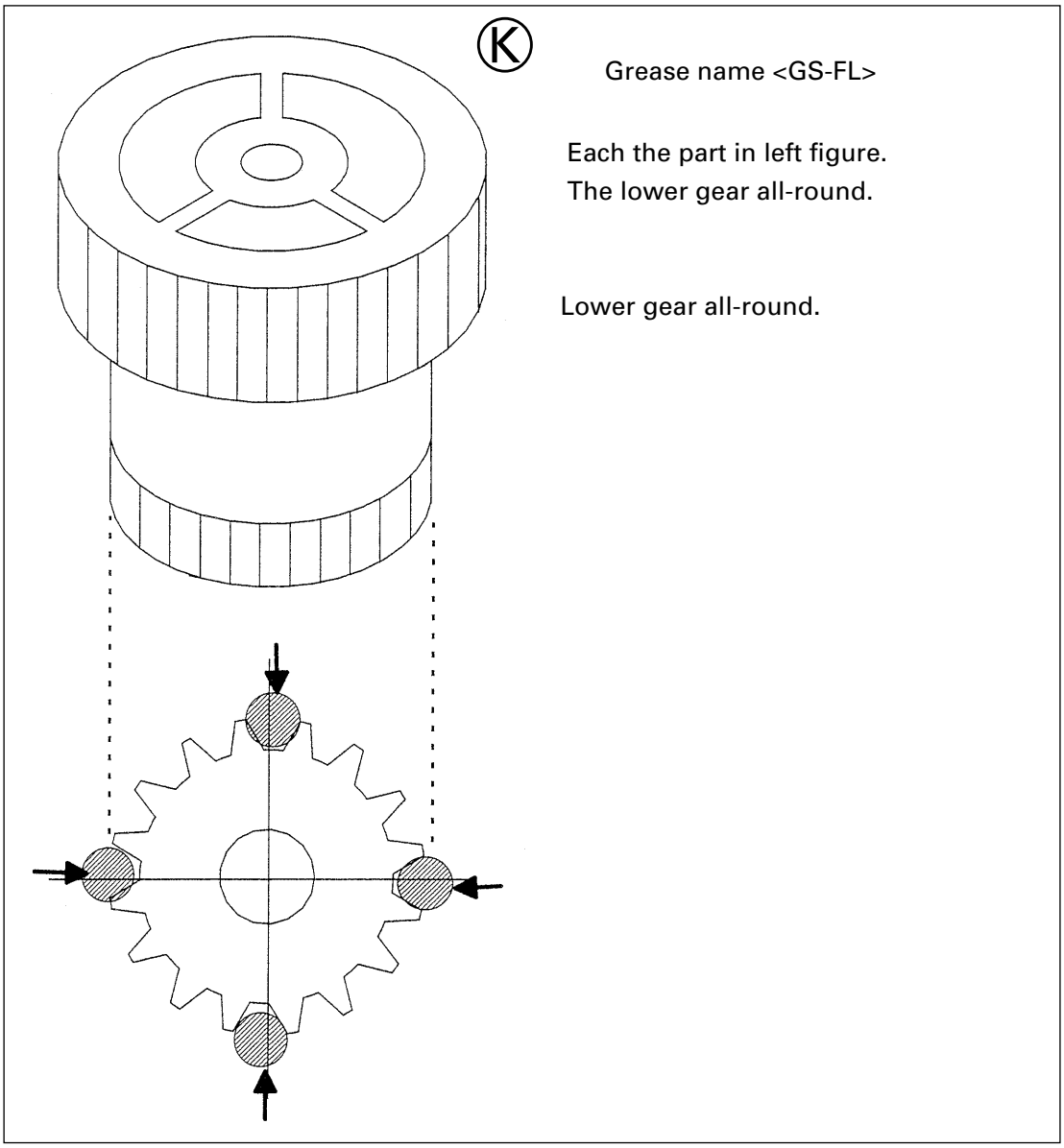
② Grease name <GS-FL>
The half-pierce.



③ Grease name <GS-FL>
The ③-part in left figure.
The ③'-part in left figure.

Rubbing between mode arm and cam (mode gear).

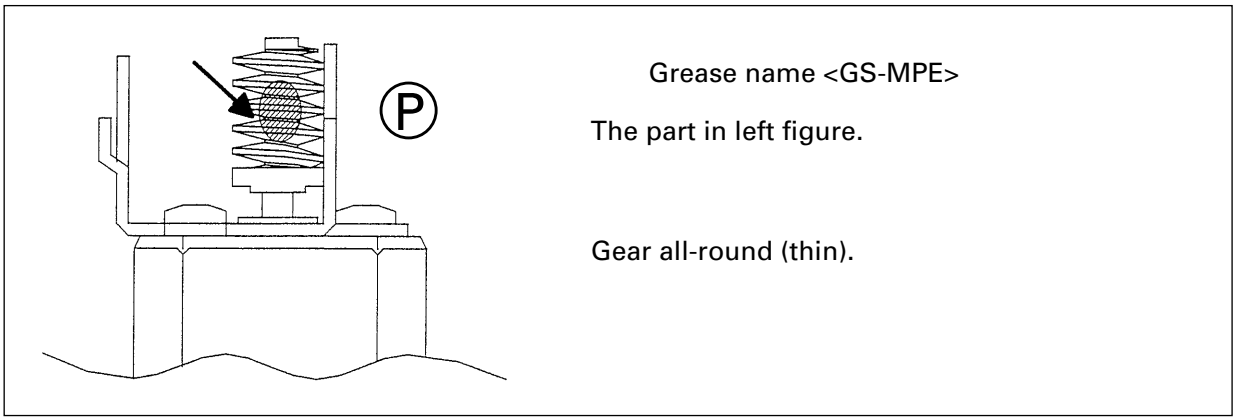
● **Pre mode gear and Worm gear**



Grease name <GS-FL>

Each the part in left figure.
The lower gear all-round.

Lower gear all-round.

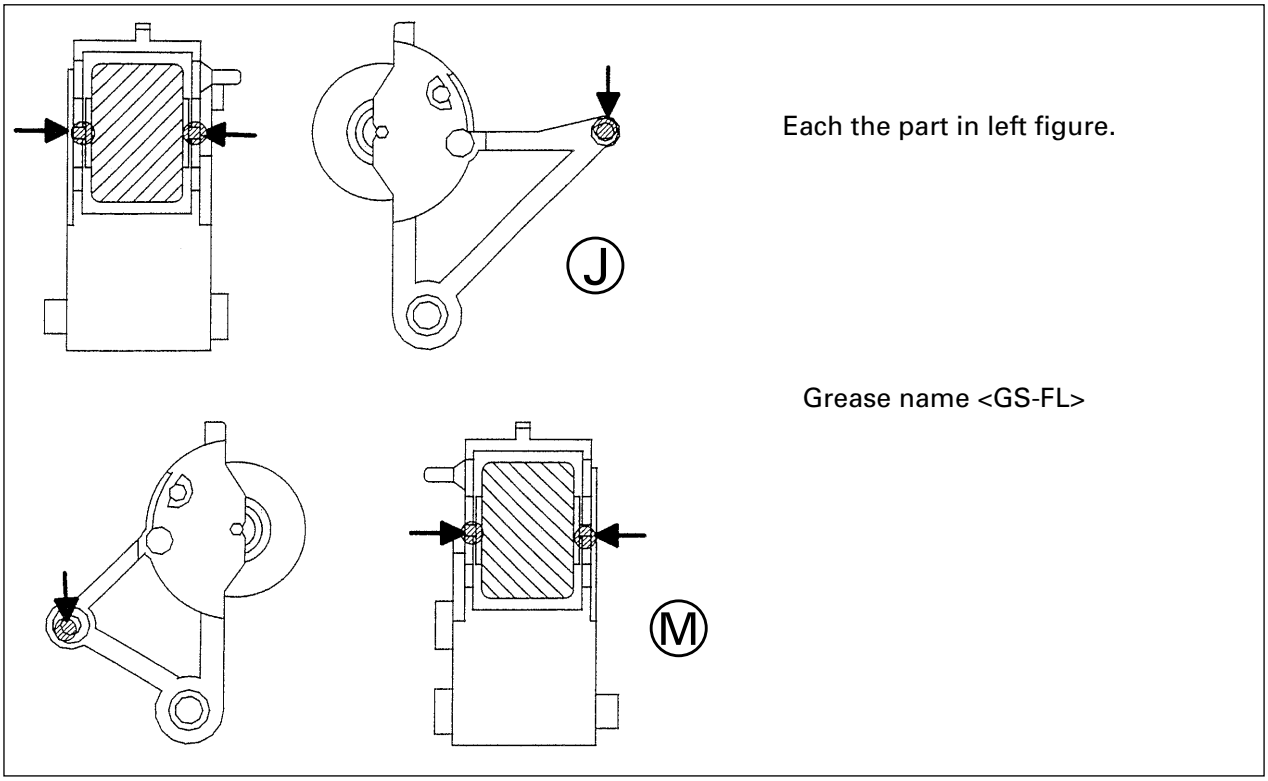


Grease name <GS-MPE>

The part in left figure.

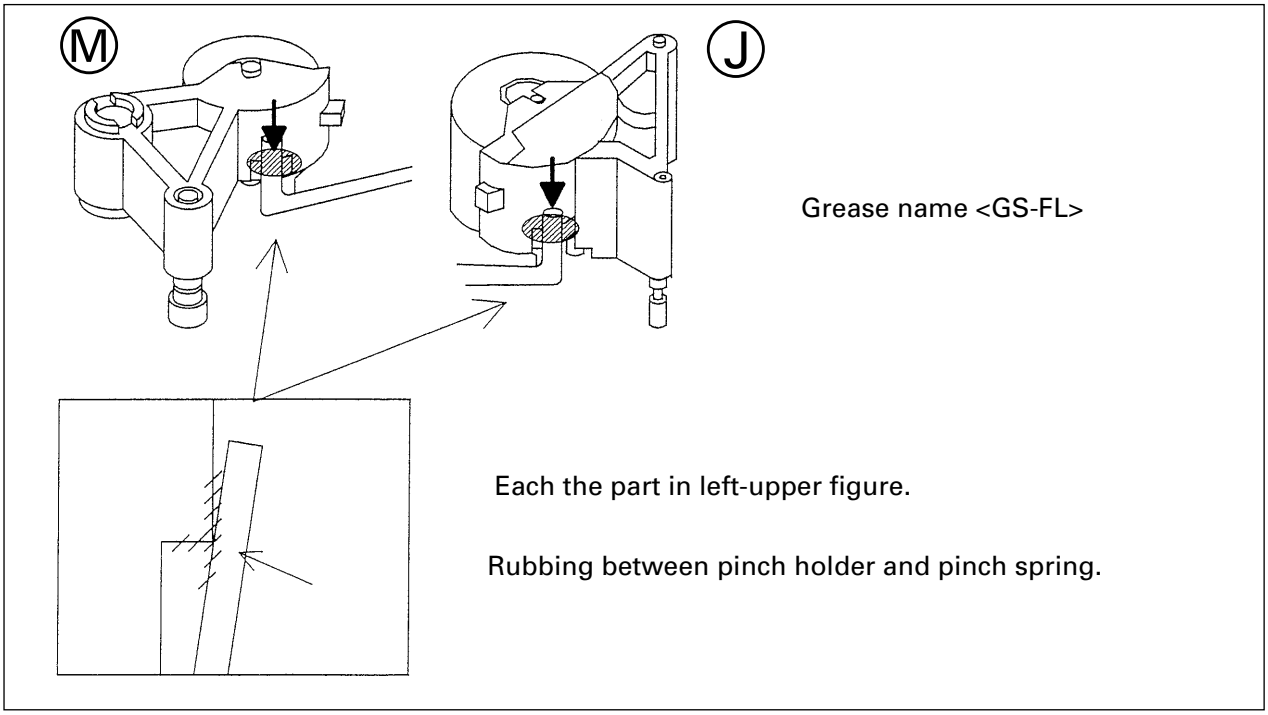
Gear all-round (thin).

● **N/R Pinch holder**



Each the part in left figure.

Grease name <GS-FL>

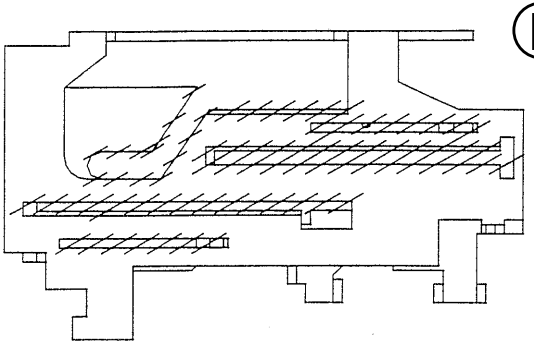


Grease name <GS-FL>

Each the part in left-upper figure.

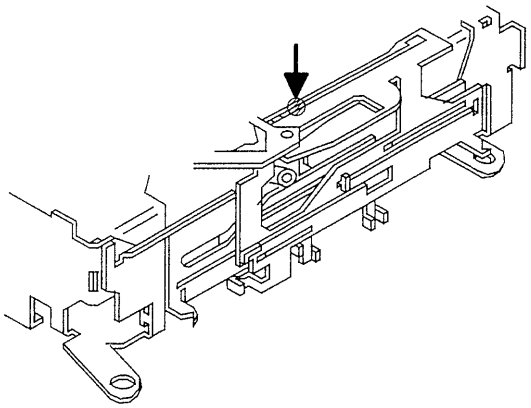
Rubbing between pinch holder and pinch spring.

● **Put-down lever 2 and Put-down buffer lever**



The edge of slant-part in left-upper figure.

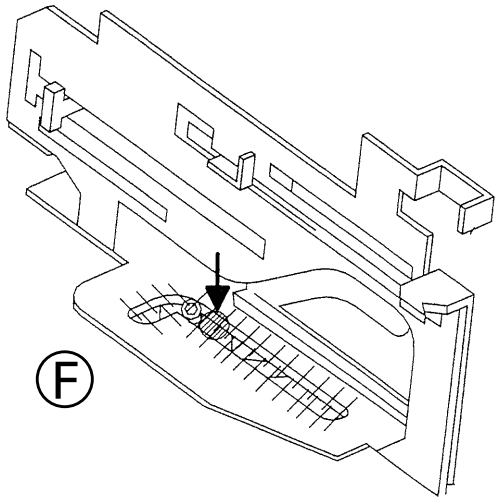
Grease name <GS-FL>



The allow-part in left figure.
The edge of slant-part in left figure.

Rubbing between load buffer lever and bend (chassis).

Grease name <GS-FL>

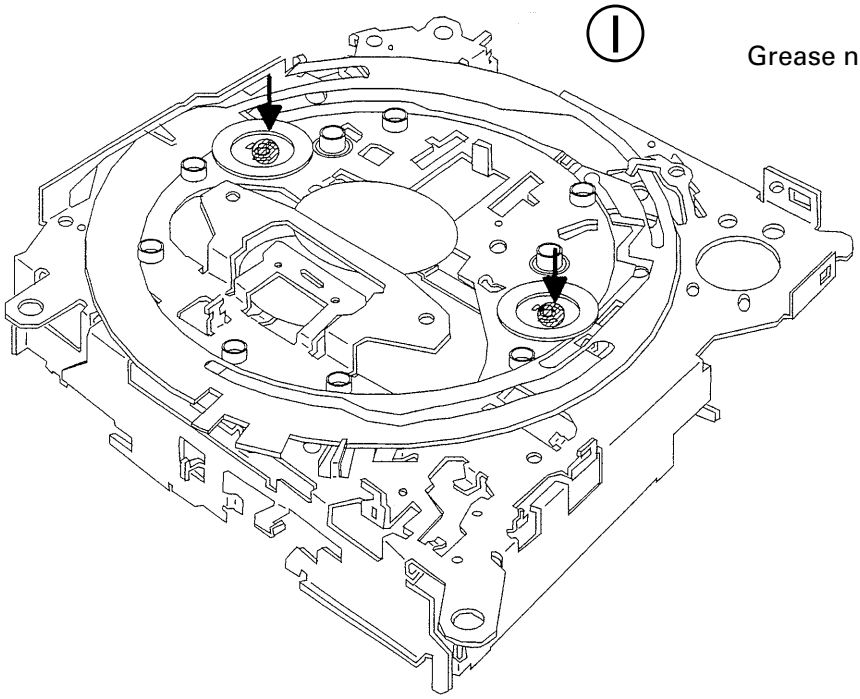


The allow-part in left figure.
(after fix load buffer lever).
The edge of slant-part in left figure.

Rubbing between load buffer lever and bearing (draw-in arm).

Grease name <GS-FL>

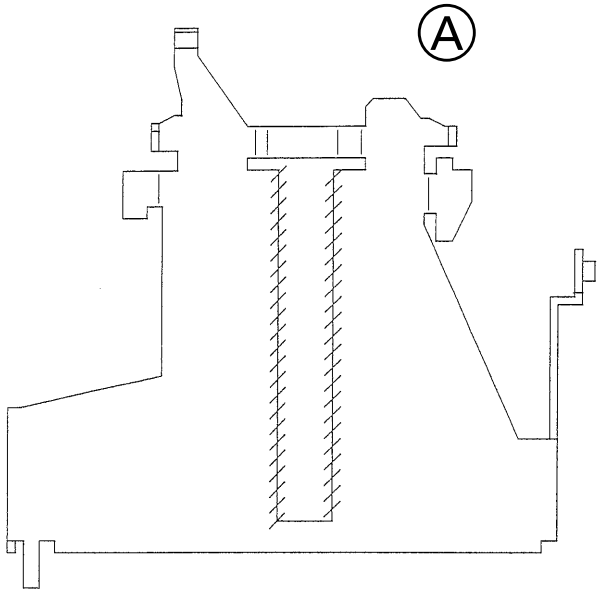
● **Idle gear**



Grease name <GS-FL>

The allow-part in upper figure. Rubbing between between idler gear and idler arm.

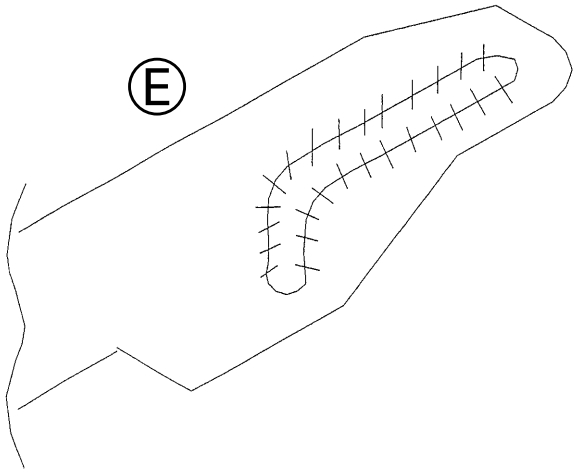
● **Cassette frame and Draw-in arm**



The slant-part in left figure (Thin).

Rubbing between cassette frame and draw-in lever.

Grease name <GS-FL>



The slant-part in left figure.

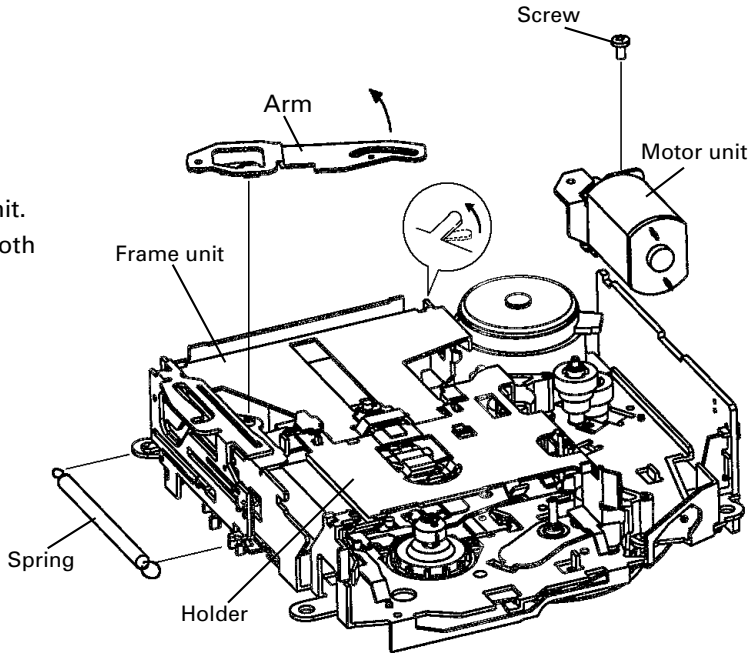
Rubbing between draw-in arm and draw-in lever.

Grease name <GS-FL>

3. DISASSEMBLY

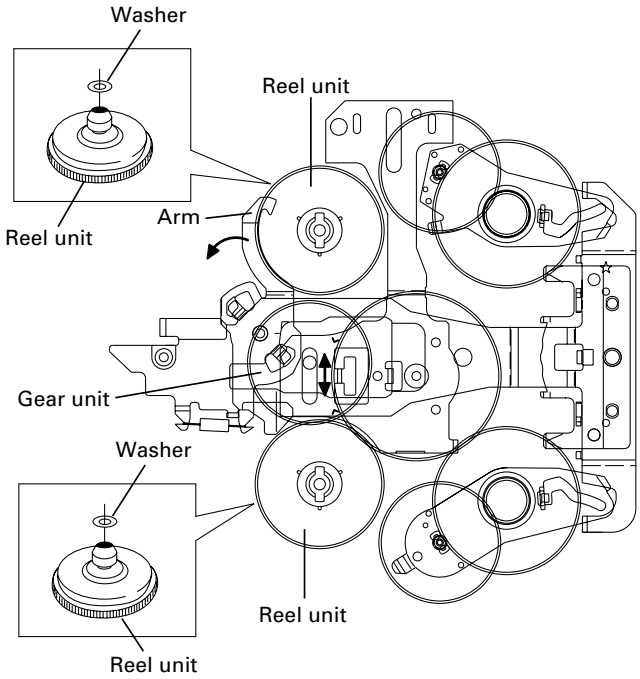
● Remove the Cassette holder

1. Remove the spring and the arm.
2. Remove the screw, and then remove the motor unit.
3. Straighten the frame unit pawl, and remove both holder and frame unit.



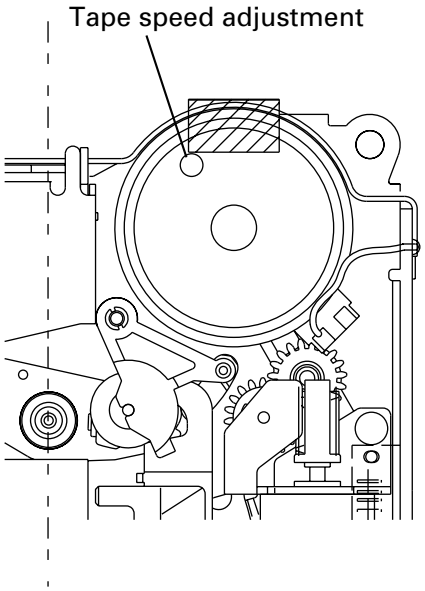
● Remove the Reel Unit

1. Remove the washer.
2. Slide the gear unit to separate it from the reel unit.
3. Push the arm in the direction marked with an arrow, and remove the reel unit.



4. ADJUSTMENT

4.1 TAPE SPEED ADJUSTMENT



● **Adjustment method**

1. Load the test tape NCT-111 (3kHz, -10dB)and play.
2. Adjust the semi-fixed resistor so that frequency counter shows 3015Hz(+75Hz, –45Hz).

4.2 CHECK POINTS OF CASSETTE MECHANISM

Confirm the following items when replacing parts of the cassette mechanism .	● Tape speed deviation: 3,000Hz +90Hz, –30Hz (4.76cm/s +3%, –1%) Using an NCT-111, measure the speed at the start and end of winding and take the maximum values.If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5–6 seconds.	● Wow and flutter: Less than 0.15%(WRMS) Using the NCT-111, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer very considerably, adjust to 70 % of the minimum and maximum values. Measuring time shall be 5–6 seconds.
● Fast forward and rewinding time: 85–105 seconds Using a C-60, set to fast forward and rewind, and measure the time with a stop watch.	● Winding torque: 45–70 g•cm (4.41–6.86mN•m) Using a cassette type torque meter (100 g•cm), measure the minimum value while in the play mode. Measuring time shall be 5–6 seconds.	● F.F. torque: More than 50 g•cm (4.9mN•m more) Using a cassette type torque meter (130 g•cm), measure the value when the tape stops in the F.F. mode.
● REW torque: More than 50 g•cm (4.9mN•m more) Using a cassette type torque meter (130 g•cm), measure the value when the tape stops in the REW mode.	● Back tension torque: 1.5–5.5 g•cm (0.15–0.54mN•m) After setting the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.	